Study of lifestyle and physical activity patterns of British and Kuwaiti 15-16 year old boys

Al-Jaser, Taha Abdul-Rahman

Award date:
1995

Awarding institution:
University of Bath

Study of Lifestyle and Physical Activity Patterns of British and Kuwaiti 15 - 16 Year Old Boys

Submitted by Taha Abdul-Rahman Al-Jaser
for the degree of Ph.D.
University of Bath
1995

Taha A. Al-Jaser

Taha Abdul-Rahman Al-Jaser

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

Dedication

*T*o all the precious sons
and daughters of the world.
Hoping that we may learn
enough now to help them
enjoy life to the fullest
in the future.

Acknowledgements

I would like to acknowledge with sincere gratitude the efforts of my advisor, Dr. Chris James. Throughout this study his constant support, and his patience with my occasional over enthusiasm for the topic, have been greatly appreciated.

I must also express my gratitude to my internal examiner Dr. Peter Richards, and my external examiner Dr. Len Almond, for the time they took from their schedules to help in the completion of this project.

I am also indebted to all the students, teachers, and the many other individuals in the UK and Kuwait who contributed so much to this study. Without their cooperation this project would never have been possible.

I would also like to express my gratitude to my family for their patience and support throughout this project.

I would also like to acknowledge Kathleen Wulf and Barbara Schave (1984) for their inclusion of the 'Ninety - Ninety Rule of Project Schedules',

"The first 90 percent of the task takes 90 percent of the time, and the last 10 percent takes the other 90 percent" (p. 108). It made me feel that I was not the only person who felt totally lost for time.

Abstract:

It is very well documented that appropriate physical activity over a sustained period of time can have a profound effect on adult health. A mounting body of data confirms that this is also the case in young people and it is likely that physical activity in this group will lead to improved health in adults.

Despite a new understanding of the relationship between health and physical activity, levels of physical activity in young people have declined significantly in recent years. In addition to this decline, levels of school physical education participation are falling rather than rising. Many studies on youth fitness in the UK and US have revealed very similar results, that is, a substantial proportion of the nation's children are under-exercised, at least in regard to activities demanding vigorous aerobic exertion. The most noticeable decline in physical education/ physical activity is at the secondary school level. This then leads to lowered levels of appropriate physical activity in adults.

A preliminary survey, comprising a lifestyle questionnaire and the AAHPERD health-related fitness test battery, was conducted to gain baseline data about the study group. One hundred seventy one British and (n = 133) Kuwaiti 15 to 16 year old boys took part. Results of the preliminary survey indicated low levels of physical fitness and physical activity. This information formed the basis of the intervention study. The intervention study was a health-related physical education programme. One year 10 physical education class (n = 40 approx.) in the UK, and one comparable year physical education class (n = 50 approx.) in Kuwait took part Pre-test and post-test components consisted of a questionnaire, knowledge test, attitude scale, and the AAHPERD health-related fitness test. At the conclusion of the intervention study semi-structured individual interviews with students and teachers were conducted.

Statistically significant changes were recorded in various programme components. The knowledge test component for both groups showed significant changes, however there was no meaningful change in the student attitudes toward the subject. Pre-test self-reported extracurricular activity levels of 95% participation for the British boys and 58% participation for the Kuwaiti boys, and this pattern was reflected in the results of the AAHPERD run/walk fitness component. Individual interviews revealed that in Kuwait PE is greatly influenced by culture, this was not so evident in the UK. This paper presents the components of the health-related programme and implications for future research.

Table of Contents

References:

List of Appendices:

List of Tables:

Chapter Four:

Chapter Five:

Chapter Six:

List of Figures:

Chapter One:

Chapter Three:

Chapter Four:

Chapter Five:

Chapter Six:

Chapter One
Introduction

1.0 Research Background:

Is physical education really necessary for children? After all they never sit down. It's always go, go, go. Children are just naturally active and physical education is a waste of time that could be better spent learning something important. Who ever heard of teaching kids to be active? Teach them to sit down!

It seems hypocritical that at a time when it is absolutely essential for our children to be dressed in the most fashionable exercise clothes, when 1 out of 5 pairs of shoes sold in the UK are trainers (279 million pairs per year), at a time when even the ever youthful Barbie doll has her own exercise outfits and equipment, that actual youth activity levels are at an all time low. It seems we liken our children to their toys, we get them the equipment but we neither encourage them to be active nor teach them the very real benefits of physical activity. There is an appearance of health and physical activity but there is no substance.

Many national studies on youth fitness in the UK and the US have revealed very similar results, being that, the greater proportion of the nation's children are under-exercised, at least in regard to activities demanding vigorous aerobic exertion (Armstrong, 1989; Gilliam, 1982; Hunsicker & Reiff, 1986). Baranowski, Tsong, and Cieslik (1987) found that elementary school children performed no daily physical activity that would qualify, by strict definition, as aerobic (Baranowski et al., 1987). In a study carried out at Exeter University results indicated that children in the UK do not exercise enough to maintain health. Of the children studied, 76.7% of the boys and 87.7% of the girls did not participate in any aerobic type physical activity during an entire week (Armstrong, 1989). These results are very significant when it is taken into consideration that aerobic exercise increases cardio-vascular efficiency and helps maintain muscle tone and proper body weight, three components that have a direct effect on heart disease, Britain's main cause of premature adult death. While physical

activity provides many benefits to adult health, there is little evidence to support the premise that vigorous physical activity improves childhood health. Children generally do not suffer from CHD or hypertension in the same manner or degree as adults. The primary factors adversely affecting childhood health are unplanned pregnancy, substance abuse, physical or sexual abuse, anxiety disorders and other trauma or violence. Physical activity is not likely to have an impact on these problems (Pate & Hohn, 1994). Why then should researchers undertake to study and encourage physical activity in children? Many children gain benefit from being active. They develop a variety of movement skills and gain self-confidence, many children derive great enjoyment from participating in physical activity (Corbin, 1986; Sports Council for Wales, 1993). Physical activity in children can also help develop healthy musculature and proper growth in the developing child. Finally enjoyment and participation in physical activity in childhood may help develop a habit of physical activity that is carried into adulthood. Although this is an attractive premise the literature to support it is equivocal (Brill, Burkhalter, Kohl, Blair, & Goodyear, 1989; Dishman, 1988; Powell & Dysinger, 1987).

Blair, Clark, Cureton, & Powell (1989) also accept that current research is unable to establish an absolute link between childhood physical activity levels and improved levels of adult physical activity levels and health. Figure 1.1 is Blair et al.'s conceptual model of how childhood physical activity and exercise habits may affect health throughout life. Arrows indicate possible relationships.

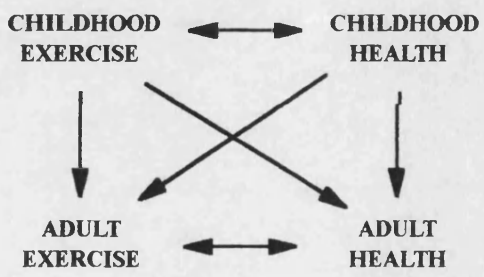


Figure 1.1 Conceptual model of how childhood exercise may affect health throughout life.

1.1 Definition of Terms:

What are we saying? What is it exactly we want? As educators are we being clear? Are we being understood? Are there so many terms with various vague meanings that we have sent all concerned floundering in a sea of unclear physical education jargon? The terms physical activity, exercise, and physical fitness share certain aspects, however, there are significant differences in meaning and they cannot be used interchangeably.

The World Health Organization has defined ***Health*** as *"a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity"* (Breslow, 1990, p.9).

Physical activity is any and all skeletal muscle movement, there are of course varying degrees of activity from person to person (Armstrong and McManus, 1994).

Appropriate Physical Activity, is exercise that is performed aerobically, at the proper intensity, duration, and frequency, through which sedentary individuals of all ages can improve their physical capacity, including endurance, strength, and flexibility (Armstrong, 1989; Corbin, 1986; Wilmore, 1982). The activity must be intense enough to expend at least 300 Kcal per exercise session. Increasing expenditure above 300 Kcal and increasing frequency of a program will serve to enhance fat weight loss while sparing lean tissue (Leon, Conrad, Hunninglake & Serfass, 1979).

Exercise, *"is a sub category of physical activity that is planned, structured, repetitive, and purposeful. Exercise programs normally have the objective of either improving or maintaining one or more of the components of physical fitness."* (Armstrong, 1989, p.28).

Physical Fitness is *"the ability of the heart, blood vessels, lungs, and muscles to function at optimal efficiency."* (Getchell, 1992, p. 4). Physical education professionals agree that physical fitness is a state of well-being that allows individuals to perform their daily activities with vigour; to reduce the risk of health problems; and to participate in a variety of physical activities (Dotson, 1988). Physical fitness is perceived to, *"...enhance health and the quality of life"* (Sharkey, 1990, p. 415).

Physical fitness comprises two broad categories, Motor Fitness and Health-Related Fitness. Figure 1.2 illustrates the components of motor fitness and health-related physical fitness.

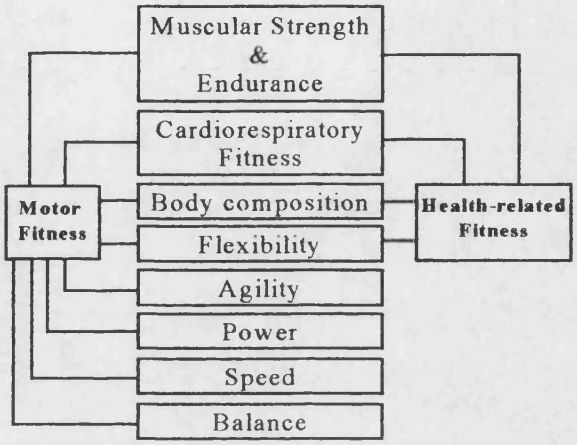


Figure 1.2 Components of motor fitness and health-related physical fitness (Pate, 1983)

Motor fitness is fitness determined by:

- ***Agility:*** *Ability to change direction quickly while maintaining control of the body.*
- ***Power:*** *The rate of doing work.*
- ***Speed:*** *The sum reaction time and movement time (time to complete the movement).*
- ***Balance:*** *Ability to maintain equilibrium while in motion.*
- ***Body composition:*** *The relative amount of fat and lean tissue.*
- ***Flexibility:*** *Range of motion through which the limbs or body parts are able to move.*
- ***Cardio-respiratory endurance:*** *Maximum ability to take in, transport, and utilise oxygen*
- ***Muscular strength/endurance:*** *The strength, muscular endurance, and flexibility you need to carry out daily tasks and avoid injury.* (Sharkey, 1990, p. 413)

Half of the components of motor fitness can be directly related to athletic ability and are more dependent than others upon genetic factors(AAHPERD Test Manual, 1980;

Armstrong, 1989; Pate, 1988). ***Health-related fitness*** like motor fitness is determined by the sum of its parts. It is fitness determined by:

- ***Cardio-respiratory endurance:*** *Maximum ability to take in, transport, and utilise oxygen*
- ***Body composition:*** *The relative amount of fat and lean tissue,*
- ***Muscular strength/endurance:*** *The strength, muscular endurance, and flexibility you need to carry out daily tasks and avoid injury.*
- ***Flexibility:*** *Range of motion through which the limbs or body parts are able to move* (Sharkey, 1990, p. 413).

Health-related fitness is generally classified as, *"undesirable, minimal, acceptable and desirable"* (Bouchard et al., 1994, p. 11). Exercise physiology research shows that speed and power performance are dependent upon genetic factors, notably muscle fibre type, which are not particularly responsive to training (Brooks & Fahey, 1984; Costill, Daniels, & Evans, 1976; Sharkey, 1990). Conversely, it has been shown that the health-related fitness variables are more responsive to change and are less genetically determined (Breslow, 1990; Costill et al., 1976; Pate & Blair, 1978). Compared with motor fitness, health-related fitness is a narrower concept that usually includes only those fitness components that can help prevent disease and/or promote health (Pate, 1988). As with anything dealing with the human condition, environment and genetic differences of individuals within the population will influence outcomes. Some individuals will not receive as great a benefit from exercise as others, however, health-related fitness is meant to encourage maximum fitness in each individual. It must be accepted by those in the profession that even with the same training, not all people will exhibit the same levels of fitness (Bouchard & Shepard, 1994).

1.2 Purpose of the Research:

The quality of physical education in Kuwait is of great interest to me. As a physical education instructor I am constantly confronted by friends who chide me as to the importance of physical education. *"What a job playing all day"*. There are many who will say, *"You are a 'PE' teacher not a real TEACHER"*, *"You teach people to play games but your not an educator."* Even my close associates do not regard physical education as a subject that needs to be taught, as we all know how to move and play, and certainly there is nothing at all in physical education to be researched. It is my firm belief that physical education does have something to contribute to education and educational research.

I was extremely interested in assessing and understanding the position of physical education in Kuwait. What did their physical education lessons actually teach the students, and what were the potential benefits to be derived from the physical education lessons? There are many outside influences which may also affect participation in physical activity, these were likewise of interest. Problematically, there is very little background information on physical education lessons, or individual physical activity levels in Kuwait. I did not believe that a study of only Kuwaiti children would yield the depth of information I was seeking. While the data gained could be used as baseline information for Kuwaiti children, I wanted comparative data which might give a clearer picture of the nature of the physical education lesson as well as insight into the children's physical activity levels. It was at this point that I decided to develop a comparative study of British and Kuwaiti adolescent (15 to 16 years old)boys. Adolescent aged boys, rather than younger boys, were chosen as subjects because they could more precisely express their opinions, and they are able to comprehend the abstract relationship between actions in youth and results in adulthood. Boys only was a necessary limitation as there are cultural and religious influences in Kuwaiti which prohibit the interaction of an adult male and an unrelated female. Considering time constraints, it would not be possible for me recruit a female physical education instructor to implement some of the fitness tests. It was also

unlikely, because of the age the girls, that I would even be allowed to observe their physical education lesson. These restrictions would severely limit the validity of my interpretations of the resulting data. For these reasons girls were not included in this study.

It was the purpose of the research to explore and compare lifestyle behaviours and physical activity levels of British and Kuwaiti 15-16 year old boys. The boy's physical fitness levels, attitude toward physical education and physical activity, as well as their knowledge of specific principles involved in physical activity would be investigated. It is hoped that data gathered using test instruments, which would assess psychomotor, affective and cognitive domain would allow for better understanding of why the students made the choices they did, and how physical education lessons and physical educators would be able to positively impact students physical activity choices. The data would be compared and contrasted between the two groups.

The information gained through the implementation of this project could be used in many ways. It could be a first step in exploring physical education in Kuwait. Baseline information could be published in order to encourage further research in this area. The information could also be used to enhance the quality of the current physical education programme. Strengths and weaknesses of the course could be brought to light and the data forwarded to the appropriate individuals for debate and recommendations. If inadequacies within the lesson were found, there might be implications for of physical education teacher education (PETE). As a physical educator I wanted to ascertain the best way to help students learn and understand the effects physical activity, or lack of it, could have on their lives. It is possible that a greater understanding of the issues surrounding youth physical activity choices, might lead to ways of improving adult physical activity levels in the future.

I believe that this study is timely and relevant in both the UK and Kuwait. With more and more constraints being placed upon public sector funding, education is being especially hard hit, any subject that cannot prove its' worth can easily be phased

out. This is especially true in Kuwait, costs of reconstruction after the Iraqi invasion have put severe financial burdens on the government, budgets are very tight at this time. As Silverman (1993) states, *"...there is no neutral money " (p. 173).* The physical education profession will have to emphasize the need for physical education within the educational system. The value of physical education is inextricably linked with the research proving unequivocally the benefits of physical activity on adult health. Physical education can be instrumental in educating young people that the easiest way to combat diseases of the cardio-vascular system, the major cause of premature adult death and disability in Britain and Kuwait, is through consistent, moderate exercise. The personal benefits could be immense and the national benefits of increased productivity and decreased medical expenditure could be staggering. There is also the knock-on effect of exercise. Appropriate physical activity of the prescribed frequency burns calories, thereby reducing excess weight and obesity, positively effecting diabetes and hypertension. The possible contributions to be made by physical education are substantial on, personal, national, and international levels.

1.3 Thesis Organizer:

A quick overview of the study is presented in chapter one. Definitions of the terms contained within the text are also presented here. A short introduction into the research background and the purpose of the research is included.

Chapter two provides a brief glimpse into the correlation between physical activity and health and the role physical education can play in encouraging a lifetime of physical activity. The value of fitness and knowledge assessment instruments in physical education are outlined.

A review of literature related to the issue of physical activity and its effect on health is presented in chapter three. The influence of physical activity on coronary

heart disease (CHD), obesity, diabetes and hypertension is also examined. The impact a physical education curriculum could have on encouraging positive lifetime physical activity is also investigated.

Chapter four provides a comprehensive explanation of why the methodology used in this study was chosen. Included in the overview is a discussion of qualitative and quantitative research methods.

The results obtained on the preliminary survey through the use of two test instruments are presented in chapter five. Methods and research instruments used in this section of the project are thoroughly explained. Data are presented by nationality and age in written, table, and graph form. In addition, these results are discussed in order to assist the reader's comprehension of this section of the study.

Chapter six contains the research methods and test instruments of the main study. All methods and research instruments and their development are explained in this chapter. The data acquired through the use of the main study test instruments are presented by nationality in written, table, and graph form. The test results of the AAHPERD health-related fitness tests are also contrasted with American norms. All test results are discussed to assist the reader.

Conclusions based on the research findings are presented in chapter seven. Recommendations for change and further study are also presented in this chapter.

Chapter Two

A Brief Background on

Physical Activity and Physical Education

2.0 Introduction:

It is very well documented that appropriate physical activity over a sustained period of time can have a profound effect on adult health (Kohl, Blair, & Paffenbarger, 1988; Morris, Everitt, Pollard & Chave 1980; Paffenbarger & Hale, 1975; Paffenbarger & Hyde 1980; Paffenbarger, Hyde, Wing, & Hsieh, 1986). To further understand the significant effect physical activity may have on individual health the relationship between physical and the major causes of adult death and disability in the UK and Kuwait will be discussed.

2.1 Physical Activity and Health:

Unhealthy and unfit children can become unhealthy and unfit adults; heart disease, the leading cause of premature adult death in the UK and Kuwait finds its roots embedded in our youth. It has been proven time and again that there is a direct relation between adequate levels of physical activity in adulthood and lowered incidence in these life limiting diseases (Froelicher & Oberman, 1972; Morris, et al., 1980; Paffenbarger, Wing & Hyde, 1978). In 'Physical Fitness in Preschool and Elementary School aged Children', Seefeldt states that increased levels of aerobic activity have been associated with decreased fat weight, increases in high density lipoprotein, decreases in triglycerides, increased oxygen consumption, decreased resting heart rates, and more efficient heart function during physical activity (Seefeldt, 1984). The extent to which increased physical activity can normalize disease risk factors, and how much such normalization will improve a child's ultimate prognosis are open to debate (McGammon, 1970). Nevertheless, it remains likely that physical

activity contributes to the prevention and control of several major disease risk factors. Thus, Goldblum writes,

> *"The change in our children's lifestyle which might effect an ultimate reduction in the prevalence and severity of life limiting diseases and which would benefit the entire population would be a significant increase in daily caloric expenditure...like other protective measures, it is most effective if initiated at the earliest possible age" (Goldblum, 1979, p. 68).*

Although CHD usually manifests itself during middle age, the seeds of the disorder seem to develop decades earlier (Armstrong, 1987; Berenson, 1986). In a now famous study, army pathologists examined the hearts of 300 American soldiers killed in combat in Korea. These men, their average age 22, were apparently in good health when killed, and none were known to be suffering from heart disease at the time of death. Yet in more than 75% of the men, the atherosclerotic process had already begun (Enos, Holmes, & Beyer, 1953). Also, autopsies performed on children 12-years-old and less, killed in accidents, revealed that cholesterol formation had already begun on the arterial wall (Cooper, 1982). Several researchers have found CHD risk factors present in children (Clarke, 1979; Glueck, Kelly & Mellies, 1978; Mitchell, 1973). Gilliam et al., found 62% of 43 children aged 7 to 12 had at least 1 risk factor, and 21% had 3 or more (Gilliam, Katch & Thorland, 1977). Wilmore and McNamara found similar results in 8 to 12 year old boys (Wilmore & McNamara, 1974). Berg et al. found 42% of children aged 7 to 12 (63 students, 32 boys, 31 girls) had one risk factor, 12% had 2 and 3% had 3 (Berg, Sady, Beal, Savage & Smith, 1983).

In the 1990 National Dietary Survey by the Office of Population Censuses and Surveys it was discovered that 45% of men and 36% of women in the UK are overweight (Coghlan, 1991). It is estimated that 15 to 30% of all US adolescents may be overweight (Felts, Tavasso, Thomas & Dunn, 1990). The prevalence of obesity in the adult Kuwaiti population, as reported by the Nutrition Department and

the Preventive Health Nutrition Unit, was 34% of the men and 59% of the women were classified as obese (Ministry of Public Health-Kuwait, 1981). Al-Hooti & Eid (1984) research results indicated that 18-27% of Kuwaiti school age children were obese. The observation that obese children are less active than normal weight children and are often less fit, (Davies, Barnes, & Godfrey, 1972; Strong, 1988; Wilkinson, Parkin, Pearlson, Strong & Sykes, 1977), than slimmer children favours the hypothesis that a programme of increased physical activity can help reduce weight as well as improve fitness (Huttunen, Knip & Paavilainen, 1986). There are, however, some studies which show that there is very little difference between the activity levels of obese and non-obese children. In some instances the obese child can be more fit due to the additional workload due to their extra weight (Bradfield, Paulos & Grossman, 1971; Muecke, et al., 1992). These discrepancies in results may be due to the fact that measuring daily habitual activity is difficult because activity has to be assessed in terms of type, duration and intensity (Anderssen, Rutenfranz, Masironi & Seliger, 1978; Armstrong, 1989). Also, in self-reported activity levels in obese children the child and the parent may have a different interpretation of what constitutes physical activity, both of which may be far from the actual clinical definition, or, they may not be reporting objectively (Huttunen, et al., 1986).

Lower than desirable physical activity levels are not limited to major developed countries. In emerging countries industrialization, with its advancement in science and technology, has caused a greater availability of leisure time. Whereas previously most of the hours of the day were devoted to the everyday tasks of life, now the instruments of technology have taken over, changing the nature of work from active manual labour to sedentary tasks. This situation applies to a country such as Kuwait, a country still in the process of development.

2.2 Physical Activity and Lifestyle:

In addition to the aforementioned effects on disease, physical activity affects health in other ways. People who exercise regularly report that they feel better, have more energy, and often require less sleep. Regular exercisers often lose extra weight as well as improve muscular strength and flexibility (Bouchard et al., 1994). Many also experience psychological benefits including enhanced self-esteem, greater self-reliance, decreased anxiety, and relief from mild depression (Morgan, 1994; Phelps, 1987; Simons, McGowan, Epstein, Kupfer & Robertson, 1985). The Canadian Fitness and Lifestyle Research Institute (1994) states,

> *"Studies conducted on children also showed increases in self-esteem. Simple activities, such as physical fitness and aerobic activities, had a much more profound impact on their self-esteem than complex activities which are harder to master" (p. 45).*

Moreover, people may adopt a healthier lifestyle, by abandoning cigarette smoking, excessive drinking, and poor nutritional habits.

2.3 Physical Education and Health-related Fitness:

Health professionals, ranging from governmental policy makers to local family physicians, have embraced the concept of disease prevention and health promotion through adoption of positive personal health behaviours (The Health of the Nation, HMSO, 1991; The Health of the Nation, HMSO, 1992; US DHEW, Healthy People, 1979; US DHEW, 1990). If this concept is considered in light of the vast amount of research outcomes that link regular exercise to health maintenance (Morris, Chave, Adam, Sirey, Epstein & Sheehan, 1973; Paffenbarger, et al., 1986), the most obvious conclusion is that health-related physical education is very relevant to our children and their present and future health (Almond, 1991; Biddle, 1987; Corbin, 1986; Pate, 1988). It makes sense, and is the responsibility of all concerned, to focus on health-

related components in youth fitness programs in order to establish lifetime fitness, which in turn adds to the quality of individual lives (Almond, 1982; Armstrong, Bellew, Biddle, Bray, Gardony & Winter, 1990; Fox & Biddle, 1987).

The acceptance of this concept is also voiced by British Association of Advisers and Lecturers in Physical Education (1989) in their framework for discussion submitted to the Secretaries of State for Education and Science for England and Wales in which it is stated under *"The Essence of Physical Education"* that,

> *"There are many widely accepted reasons why all children should experience regular Physical Education throughout their schooldays, and furthermore, that these experiences should motivate them to build regular exercise into their leisure time throughout their lives. Medical evidence overwhelmingly shows that regular physical activity protects against coronary heart disease, as well as promoting and enhancing general health including social and psychological well-being" (p. 1).*

2.4 Shortcomings of Physical Education:

Despite the fact that physical education was first introduced to promote health through exercise, the focus of physical education has shifted from health fitness to motor fitness (Pate & Corbin, 1981). The old adage 'The child makes the man' is proven time and again to be very true, and certainly physical education is one area that could have great impact on adult health but which is often neglected or at least its importance is underestimated in youth. The current system of physical education, which emphasises activity in physical education class but does little to encourage activity outside of the class is truly lamentable. It is of utmost concern for physical education specialists in the UK and the US.

> *"Why do we wait until adulthood to learn some hard and expensive lessons about health-related fitness, nutrition, and lifestyle behaviours? The fact is, we shouldn't. Heart disease, low back syndromes, and other avoidable conditions have such an impact on our society that educators must make them a priority if we are to truly serve our students and affect future generations." (Smith & Cestaro, 1992, p. 75).*

Health related physical fitness or those aspects of fitness that are related to, and considered to be predictive of, an individuals' present and future health need to be a focal point of a physical education curriculum (Almond, 1991; Armstrong & Bray, 1990; Biddle, 1987). Promoting health related physical fitness is not meant to exclude motor skill objectives, rather it is simply emphasizing that health related physical fitness and motor skills are different and that physical education programmes must plan for both. In some cases both objectives may be met in the same activity; in other instances specific activities must be planed for both (AAHPERD Physical Best, 1989). Cardiovascular fitness could be improved if school physical education fosters life-long fitness by making it the primary focus of the physical education curriculum (Ross & Gilbert, 1983).

Haywood, (1991), writes *"School PE programs have a dual challenge: to provide students with opportunities to be active and an ordered sequence of educational experiences that lead them to choose active lifestyles as adults"* (Haywood, 1991, p 151). While there may be opportunity for activity, sequential PE studies are rare. In English courses youngsters are taught to read at a primary level in their first year of school, it is hoped that they will then progress on to texts which are more difficult in order to be able to read and understand any material that they may be presented with as adults. Physical education rarely carries on in this manner. The 1991 Physical Education National Curriculum in England and Wales provided a certain amount of new experiences for the students as they mature. Sadly within the 1994 Revised Order for Physical Education activities have been extremely limited in terms of type and duration of lessons.

In Kuwait there is little opportunity for change or progression of learning within the set physical education curriculum. Physical education lessons are the same, from primary through secondary school. Year after year the students are presented with the same information about the same games (Kuwait Ministry of Education, 1988).

Elementary physical education is the base upon which to build future physical activity. There are many programmes directed at younger students, in order to foster enjoyment of physical activity. The problem remains that the variety and enthusiasm has to be provided at every level. *"Secondary school PE programs may be the weakest link in the (physical activity) chain. There is evidence the progression toward adult health is often broken at secondary level"* (Haywood, 1991, p 151). This may be attributed to the fact that some schools consider physical education an elective course for secondary school age students. This is at a time when teenagers take greater control over their lives. They may get their driving license, possibly a part time job, and generally have less free time available for sport and physical activity. School programmes which could encourage students to regard seriously the necessity of physical activity and the positive effects of physical activity on adult health give the opposite message. Most schools regard physical education as a requirement that can be fulfilled and put aside (Haywood, 1991). However, benefits of physical activity are transitory, when you stop exercising, you lose the health-promoting effects.

2.5 Assessment Instruments in Physical Education:

"Physical education has gained a share of prominence and partnership with other facets of the educational curriculum in direct proportion to the development and refinement of its measurement and evaluation techniques" (Hastad & Lacy, 1994, p.2).

Throughout the UK, America, and Kuwait, in all the school locker rooms, there has been at least one student, at some point, complaining that if physical education isn't graded why should a person bother doing it. Students aren't the only people with this attitude toward physical education. School administrators and boards of governors also share the opinion that if you can't show quantifiable evidence of educational importance you are an added burden on an already overburdened system (Comer & Sparkes, 1992). So-called 'fringe classes' must justify their existence

within the school system. That can only be done by using measurement techniques to gather data that verify change. While teacher observation is certainly important and with the new NCPE order mandatory in the UK, being that it is ***physical*** education, some sort of physical measurement seems to be needed. There are researchers who deem certain basic test instruments used by physical education teachers as not reliable enough to yield exact assessment, to a certain degree this may be true. However, the average physical education teacher does not have access to equipment such as treadmills to determine maximal oxygen uptake (VO2 Max), or a hydro-static weighing tank to determine body composition. This equipment is highly sophisticated and costly, and is usually only available at university level. Therefore, if a teacher gains baseline information from one of the various test batteries which have acceptable parameters of validity and reliability and applies them meticulously, he/she will be able to assess if the needs of the students are being met, as well as determine if there has been any change in the students health-related fitness status. Assessment is meant to be a tool to assist all concerned in making appropriate decisions. It is not meant to accuse teachers of doing a poor job, rather it is meant to help improve the quality of a physical education programme.

Chapter Three
Review of literature

3.0 Introduction:

This chapter is meant to provide the reader with background information about the study topic. A review of published literature pertaining to physical activity and heath fitness will be presented under the following headings:

- Lifestyle and Health
- Physical Activity and Disease
- Physical Activity Levels of Children
- Physical Education Curriculum
- Kuwait: Past and Present

Information on some of the proposed topics of examination is sparse in the UK, and actually non-existent in Kuwait. Certain areas of inquiry, most notably lifestyle and its influence on health, and physical activity levels of children, have been under study in America for several decades. While there are cultural differences between America, the UK, and Kuwait, there are also similarities. The three countries are technically developed and dependent upon technology for many aspects of daily life. The general population requires less manual labour in their daily jobs, and they are predominantly sedentary in their daily routines. For these reasons in addition to the British and Kuwaiti information available, a portion of each section will contain American resources and statistics to lend a greater view and comprehension of what can be seen as a worldwide situation.

The author accepts that in addition to current studies cited within the literature, some studies more than a decade old are also included. Some might say that a study of that date can not be relevant to current research, however, past literature is actually very supportive of current research trends in the areas of lifestyle, physical activity and

health, and physical activity and physical fitness levels of children and adults. The older studies are indicators of the great time span that these topics have been under scrutiny and also that physical activity and health is not simply a fad, or flagship for the physical education profession to attach itself to. Stratton (1995) quotes the French philosopher Agite,

"It's all been said before, but nobody listened, so it's time to say it all again" (p. 21). I agree.

3.1 Lifestyle and Health:

> *"The debate on lifestyles and their impact on health is an expression of the search for ways of meeting the new situation, in which chronic conditions, particularly cardiovascular disorders and cancer, make up the bulk of morbidity & mortality, and psychological disorders such as depression and the repercussions of stress are becoming increasingly important"* (WHO 1986, p.117).

The first 60 years or so of the twentieth century could be termed the 'Medical Era' there were great advances in antibiotics and immunizations, incapacitation or death due to communicable disease were all but wiped out (McCafferty, 1979; WHO 1986). Now in the 'Post-medical Era' our health is being compromised by cigarette smoking, overeating, sedentariness, and environmental pollution, all factors not amenable to the medical approach. Armstrong (1987) terms these ailments as, *"Hypokinetic diseases- those (ailments) related to or caused by the lack of regular physical activity"* (p. 19). According to Stone, Baranowski, Sallis and Cutler (1995),

> *"The key to disease prevention is development of effective policies and programs to bring about environmental and lifestyle changes...An emphasis on children and adolescents recognizes that important issues arise at early stages of life (p. S-9)".*

Governmental agencies accept that there has been a substantial shift in health care issues and are trying to adjust accordingly. In the UK a report by the DHSS (1976) states: "The health problems facing us today...are concerned with individual human behaviour or lifestyle rather than with massive problems of environmental health and infectious disease." More than a decade on, a report by the Secretary of State for Health (HMSO, 1992) presented to Parliament indicates there has been little change in governmental position toward the health of the nation:

> *"Many people die prematurely or suffer debilitating ill-health from conditions which are to a large extent preventable. The way in which people live and the lifestyles they adopt can have profound effects on subsequent health. Health education initiatives should continue to ensure that individuals are able to exercise informed choice when selecting the lifestyles which they adopt...gains in health will increasingly depend on effective interventions." (p. 11).*

In the conclusion of the same report the Secretary of State declares, *"...success with children - for example in establishing healthy lifestyles at a young age - will itself be crucial to the long-term success of this strategy."* (HMSO, 1992, p. 116).

When discussing what the individual can do to help himself/herself improve or protect his/her health "personal lifestyle" is often proposed as a major controllable factor. While used widely, and often indiscriminately throughout the media, the term "lifestyle" is lacking exact scientific definition. *"Often people have different things in mind, apply different models and, are interested in different intervention strategies"* (Badura, 1984, p. 341).

One working definition of lifestyle that attempts to cover the multitude of background reads as follows:

> *"Lifestyle comprises the aggregate of an individual's actions and behaviours of choice which can affect health-related fitness and health status"* (Bouchard and Shephard, 1994, p. 85).

Breslow (1990) outlines the relationship of lifestyle to physiological fitness and health,

> *"Lifestyle affects health through its impact on biological systems, principally the physiological, chemical, immunologic, and anatomical systems. ...overeating results in obesity, a structural impairment that can adversely affect the cardiovascular system; overeating may also engender the disturbance of carbohydrate metabolism known as type II...diabetes. Tobacco smoke can alter the bronchial epithelium...affecting the cardiovascular system"* (Breslow, 1990a, p. 156).

According to Wankel and Sefton (1994) a "Healthy lifestyle" is:

> *"...exemplified when an individual, within the context of his or her biological limitations and particular physical and social environment, lives a life that reflects a pattern of ongoing healthy behavior"* (p. 530).

Healthy or unhealthy individual lifestyle has become a international concern, and is a topic that is being widely researched. Governments have been especially keen to find ways to improve the health and prosperity of their citizens, and thereby improve the strength and prosperity of their nation (Bouchard et al., 1994). In the UK the Secretary for State's strategy for health white paper stresses the individual within the health system,

> *"The Government's overall goal is to secure continuing improvement in the general health of the population of England by:*
>
> ***adding years to life:*** *an increase in life expectancy and reduction in premature death; and*
>
> ***adding life to years:*** *increasing years lived free from ill-health, reducing or minimising the adverse effects of illness and disability, promoting healthy lifestyles, physical and social environments and, overall, improving quality of life* (HMSO, 1992, p. 13).

Throughout the United Kingdom there are innumerable health and fitness clubs springing up. There are daily exercise and aerobic programmes on television and there are weekly programmes that address national health concerns. In addition to

their regularly scheduled programmes, national television networks produce a wide variety of specials on topics of health concerns. The Governmental commitment has certainly made an impact on public thinking; that was however the intention of the Secretary of State's white paper;

> *"The Health of the Nation initiative represents a major step forward in improving the health of the people of England. At its heart is the setting, for the first time in England, of an initial set of priority* ***health*** *targets at which the nation as a whole can aim, together with new action to focus effort on the target areas. This White Paper starts the process: the sole measure of its success will be what it contributes to the achievement of these targets and others which are developed over time* (HMSO, 1990, p. 43).

In America during the mid 60's Belloc and Breslow (1972), were gathering substantial amounts of evidence which unequivocally indicated that personal behaviours and health are inseparable and inter-related. Starting in 1965 they conducted a five and a half year survey of 6,928 American adults. The results showed that there were seven personal health practices highly related to physical health:

1- Sleeping seven to eight hours a day
2- Eating breakfast regularly
3- Eating at mealtimes with no in-between snacks
4- Maintaining proper weight for height
5- No smoking
6- Little or no alcohol
7- Regular physical activity

Adults with many or all of these healthy behaviours were found to be in better health than those individuals who did not possess more than a few of the healthy behaviours. Moreover, males aged 45 who practiced six or all seven habits on average lived 11 years longer than those who practiced none. This hypothesis was re-tested in a 1974 survey which yielded similar results (Breslow & Enstrom, 1980). Breslow (1990a) reaffirms and reiterates the findings of these previous studies. The impact personal

behaviours have upon the health status of the majority of individuals within modern society cannot be disregarded.

In 1976 American experts analyzed the 10 leading causes of death in America. Results showed that as much as 50% of US. mortality was due to unhealthy behavior or lifestyle (US. DHEW, Healthy People 1979). Joseph Califano in his 1979 report to congress stated that of the 10 leading causes of death in the US, at least seven could be substantially reduced if the persons at risk improved just five habits: diet, smoking, alcohol abuse, lack of exercise and, use of hypertension medication" (US. DHEW, Healthy People, 1979). These are modest changes which can substantially reduce risk for several diseases simultaneously. A decade on, the US Department of Health and Human Services continued its commitment to the health of the nation by initiating a campaign of health promotion and disease prevention. *Healthy People 2000* states national goals for improvement, and emphasises individual control over a variety of health promoting behaviours, *"Personal responsibility, which is to say responsible and enlightened behaviour by each and every individual, truly is the key to good health"*.

In Kuwait there is no data available on the topic of the health of the nation, vital statistics are the only records available and do not indicate any type of governmental policy. The Central Statistical Office has been issuing the *"Annual Statistical Abstract"* since 1964. However, this document contains no recommendations for change, it is set out in eight sections which provide basic statistical data relating only to economic and social aspects of the country they are:

1. *Weather and Meteoric Condition*
2. *Population and Housing*
3. *Labour Force*
4. *Agriculture & Fisheries*
5. *Petroleum & Industry*
6. *Trade Transport & Industry*
7. *Economics*
8. *Services* (Ministry of Planning Central Statistical Office, p.11, 1992).

Even though British, American, and other governments and professional bodies are dedicated to promoting physical activity for its potential benefit to individual health, there is still a long way to go in order to achieve the results which are sought by these agencies. In Kuwait there is no current research into the health status of the nation as a whole, and no indications of research to be initiated in that area in the near future. While Kuwaiti health agencies have access to technologically advanced equipment such as that which can be found in developed countries, it is not used to its fullest potential. Under the sponsorship of the government there are a variety of public health agencies such as the Cancer Society and Lung Association, sadly, they seem to affect very little influence on the society as a whole.

Within the literature there is some concern that lifestyle will be considered all important and individuals will be "held responsible" for becoming ill. There are many factors that can seriously effect individual health, not the least of which is the persons genetic composition (Bouchard, 1990; Bouchard & Shepard, 1994). There are certain diseases, notably CHD, hypertension, and type I diabetes, that have familial tendencies.

> *"Inherited differences are likely to be involved in determining the health status of a person as well as the interrelationships between individual components of the physical activity-fitness-health paradigm" (Bouchard, Shepard, & Stephens, 1994, p. 73).*

Bouchard and Shepard (1994) state that although very important contributing factors, *"Genetic differences do not operate in a vacuum"* (p. 85). The fact that the population at large is susceptible to disease in varying degrees, does not release individuals from taking due care of their health (Breslow, 1990a). People who are more genetically susceptible to disease are likely to need more help than the less susceptible individual. However, individuals need not embrace disease with low levels of physical activity, poor nutritional habits and undesirable body composition, or

excessive alcohol consumption and cigarette smoking. Heredity does not necessarily indicate destiny, and individuals must try and avoid fatalistic approaches to health issues, they might fall victim to a self-fulfilling prophecy. Sharkey (1990) states that, *"There are values and limits on physical activity and health habits"* (p. ix). All that can be expected of any individual is to do his/her best with their environment and biological makeup and with which they operate.

3.2 Lifestyle Choices: Cigarette Smoking

In the UK the Secretary of State for Health indicated that there were five key priority areas which must be addressed in order to improve the health of the nation, each priority area had specific risk factor targets. Of the five priority areas two were directly concerned with cigarette smoking, they were Coronary heart disease and stroke, and Cancers. The overall recommendations for improvement in these two areas as regarded cigarette smoking were set forward in ***Health of the Nation Risk Factor Targets***, they are as follows;

- *To reduce the prevalence of cigarette smoking to no more than 20% by the year 2000 in both men and women aged 16 and over (a reduction of at least 35% in men and 29% in women, from 31% and 28% respectively) (Baseline 1990).*
- *To reduce the consumption of cigarettes by at least 40% by the year 2000 (Baseline 1990).*
- *In addition to overall reduction in prevalence, at least 33% of women smokers to stop smoking at the start of their pregnancy by the year 2000.*
- *To reduce smoking prevalence of 11-15 year olds by at least 33% by 1994 (to less than 6%) (Baseline 1988)* (HMSO, 1992, p.20).

In regard to CHD specifically, *"smoking was estimated to account for 18% of CHD deaths and 11% of stroke deaths"* (HMSO, 1992, p. 51).

Cancers are the second leading cause of adult death after CHD. According to the Secretary of State for Health, *"Smoking has been shown to contribute to approximately 30% of all cancer deaths and is responsible for at least 80% of those from lung cancer"* (p. 65).

"In addition to lung cancer deaths, achievement of the proposed smoking prevalence and consumption targets should lead to improvements in a range of conditions including cancer of the mouth, pharynx, oesophagus, pancreas, bladder and other organs, coronary heart disease, peripheral vascular disease, chronic bronchitis and other chronic obstructive airways diseases" (p. 80).

The report also has specific guidelines for childhood smoking. In order to reduce the incidence of adult smokers there should be comprehensive education directed at stopping teenagers from starting the cigarette habit. According to the report, *"Approximately 80% of adult smokers started smoking as teenagers"* (p. 117).

There are no data available regarding tobacco use in Kuwait.

3.3 Lifestyle Choices: Alcohol

Alcohol consumption in Kuwait is socially unacceptable. As a predominantly Muslim country Kuwait implements Islamic laws regarding many public issues. The sale, possession, and transport of alcohol is illegal. The practicing Muslims within the community adhere to these secular and non-secular laws. As with any society, there will be and certainly have been in the past, individuals that do not accept these laws. Many individuals will drink alcohol with their friends in a variety of places, however it is extremely unlikely that the current disregard and legal ban upon alcohol will be changed.

In the UK, and many other countries, alcohol consumption is socially acceptable. Governmental policies accept that in certain circumstances people will have an alcoholic beverage for enjoyment, and many agencies are trying to promote *"sensible drinking"*, within the section of the population that does drink. The Portman Group, which is the drinks industry's initiative to promote sensible drinking, produce advertisements concerning alcohol related issues. These cover areas such as safe consumption limits and the severe consequences of drink driving. Drink driving offenses can carry a 5000 pound fine, disqualification from driving for twelve months, and even up to six months in prison. Drivers causing death while under the influence of alcohol can be sentenced to ten years in prison. These are stiff financial and criminal penalties, they seem to indicate that the acceptance of drink driving is no longer tolerable to the community in general, and that the attitude of, "There but for the grace of God go I", is being rejected.

The Secretary of health in the UK also acknowledges that there is a percentage of the population that does not act sensibly in relation to alcohol consumption, and there are dangers associated with excessive alcohol consumption.

> *"Sustained drinking in excess of recommended levels progressively increases the risk of raised blood pressure and stroke, and possibly CHD"* (HMSO, p. 58).

In order to combat the inappropriate use of alcohol the secretary of health stipulates that there will need to be a multi-pronged public education campaign. There will need to be a great many agencies, public and private, to tackle the serious issues of alcohol related crime, under-age drinking, the advertisement of alcoholic beverages, and drink driving. The following are the opportunities for reducing excessive and inappropriate consumption of alcohol as presented in The Health of the Nation (HMSO, 1992).

Health education	♦ *The Health Education Authority will continue to publish health education material, to develop local health education networks and to manage the Drinkwise campaign.*
	♦ *In schools, the National Curriculum now requires children between 7 and 16 to be taught about the effects of alcohol on the way the human body functions.*
National Health Service	♦ *Further promotion of sensible drinking messages will be needed at all levels in the NHS. District Health Authorities (DHAs) will also need to work with local authorities to ensure that a full range of services is provided for helping problem drinkers and their families. DHAs should seek to ensure that they are party to an agreed inter-agency alcohol misuse strategy.*
	♦ *Policy formation is greatly helped by access to quantified information on people's drinking habits. Special surveys can be undertaken as part of the development of the public health function...*
	♦ *...Family doctors are already expected to take account of their patients' alcohol consumption, and many already collect quantified information.*
Local authorities	♦ *Social Services Departments will continue to develop services for helping problem drinkers and their families within the framework of community care.*
	♦ *Local authority road safety officers will continue to mount local campaigns to deter drink/driving.*
Voluntary sector	♦ *Voluntary organisations provide services fro helping problem drinkers and their families, and will need to plan for developments within the framework of community care. They also continue to contribute to the promulgation of the sensible drinking message.*
Caring professions	♦ *Professional bodies in health and social work will continue to design training to promote the early identification of alcohol misuse, and appropriate referral skills.*
	♦ *The government is pursuing an initiative to heighten the awareness of nurses, midwives and health visitors of the incidence of alcohol misuse.*

Alcohol producers	♦ *The Portman Group, the alcohol industry's initiative against alcohol misuse, will continue to promote sensible drinking in collaboration with the HEA.*
Employers	♦ *Employers can contribute by developing and implementing workplace alcohol policies, including the referral of staff with alcohol problems for specialist help.*

(HMSO, The Health of the Nation : A Strategy for Health in England, 1992, pp. 60-61).

3.4 Physical Activity's Influence upon Health:

There are many groups and organizations that believe the research results available today support physical activity as a deterrent to disease (Bouchard, et al., 1994). The Secretary of State for Health of the UK states, *"Physical activity not only contributes to the prevention and management of overweight and obesity but also affords direct protection against CHD"* (1992, p. 62). The American Heart Association Committee on Exercise recommends physical activity be included with other measures, such as diet and medication when trying to control blood pressure, blood lipid levels and obesity (Getchell, 1992). The American Medical Association's Committee on Exercise declared, *"Exercise is the most significant factor contributing to the health of the individual"* (Getchell, 1979, p. 9). These groups are highly respected by the general public; are they being hasty when recommending physical activity as a health benefit? Actually there are numerous studies that support physical activity as a defense against illness (Paffenbarger & Hyde 1980; Paffenbarger & Hale, 1975; Morris, et al., 1980; Paffenbarger, et al., 1986). Most notable is the case of physical activity and its relationship to decreased incidence of cardiovascular disease. Paffenbarger, et. al. (1986) found that there is an inverse linear relationship between exercise and all-causes of mortality-- not only CHD, but all causes of mortality were

able to be cut by at least 1/3 if the individual was moderately active, death rates declined steadily as energy expended on activities such as stair climbing, walking, and sport play increased from 500 Kcal. to 3500 Kcal per week.

During the 1980's there was a decline in the death rate due to coronary heart disease (CHD) in the US. This decline was directly related to efforts aimed at reducing CHD risk factors (Mason & McGinnis, 1990). Public awareness of the benefits of stress reduction, proper diet, and regular physical activity has also risen considerably. One very important component of CHD reduction is the individuals inclusion of more physical activity into daily life. The benefits of regular physical activity on individual health is very well documented. Hein and Ryan (1960) reviewed over 100 studies concerning effects of physical activity and health and concluded that:

> *"exercise can play a role in preventing obesity and preserving the physical characteristics of youth; and a high level of activity throughout the life span can inhibit vascular degeneration."* (p. 263).

Nearly three decades later Powell et al. (1987) also did a comprehensive review of studies published in English on the relationship of CHD and habitual physical fitness in adults. Findings were very similar to Hein and Ryan (1960). In 47 comparisons of physically active and sedentary individuals 68% (32) of the studies indicated a lower CHD rate in the active individuals. The researchers concluded,

> *"...observations in the literature support the inference that physical activity is inversely and causally related to the incidence of CHD and that physical activity may be of equal importance as the 'big three' : smoking, hypertension and elevated cholesterol."* (Powell, et al., 1987, p 283)

Blair (1988) concluded that more recent evidence, *"strongly supports the beneficial impact of prolonged exercise and physical activity on various measures of disability, functional capability, morbidity, and mortality" (p. 479).* Certain health-related

benefits attributed to exercise are attainable by anyone who properly executes an exercise programme, including weight control, improved blood pressure levels, and reduction of CHD risk (Phelps, 1987). The author states that there appear to be other benefits often associated with physical activity, such as changes in the levels of low density lipoprotein (LDL) and high density lipoprotein (HDL), personality changes, improved cognition and improved sleep are still under investigation.

While physical activity cannot be considered a remedy for all of the health problems an individual faces, there are many reasons why exercise should be included in a comprehensive program of health promotion and self-directed lifestyle change. This is what Haskell (1984) termed the concept of prudent behaviour; if a behaviour will, most probably, benefit a person's health with relatively minimal risk or cost, it would seem to be a prudent behaviour to adopt.

There are campaigns launched by national and international organizations which are directed at increased participation in physical activity. The national press is also very active in publicizing that certain lifestyle choices may be harmful, and in warning of the possible hazards to health that may be avoided or limited through regular physical activity. *Life* and *Time* magazines among many others have published in depth articles concerning topics of fitness and exercise. There are also many publications specifically directed at individual health promotion concerns. Major corporations are investing in corporate fitness programmes in an effort to reduce loss of productivity owing to illness which could have possibly been avoided if the employees had been enrolled in a programme of physical fitness, nutrition, stress management and other areas of health protection. The organization, American Association of Fitness Directors in Business and Industry (AAFDBI) now called Association for Fitness in Business (AFB), was incorporated in 1977. The AFB purpose is to promote health and fitness through programmes offered throughout business and industry (Barnes, 1983).

Although the roles of physical activity in health or prevention of disease and premature mortality are not precisely known, there is a positive and rapidly increasing

body of research evidence which does support it. The increased American national interest in physical fitness in recent years can be attributed to data which directly relate high levels of physical activity to decreased rates of illness and morbidity (Powell, et al., 1987).

Physical inactivity is slowly nibbling its way into the hearts and bodies of millions of people of every race, young and old alike. Heart disease and diseases which exacerbate it such as, obesity, diabetes and high blood pressure, all of which are worsened by inactivity, have become a part of everyday life.

3.5 Physical Activity and CHD:

The major causes of morbidity and mortality during the 20th century has become CHD, cancer, stroke, and diabetes (Berkman & Breslow, 1983; HMSO, 1992: USDHHS, 1990). Sobie (1979) states:

> *"Significant increases in our level of health today are more dependent on choice of lifestyle and awareness of how to use the health system than on development of additional expensive life-supporting machines or therapeutic techniques (p. 4).*

Physiological risk factors of CHD include high blood pressure, hypercholesterolemia, and obesity (Kanel, 1983, Bouchard et al., 1994)). Behaviour contributing to these risk facts include excessive consumption of dietary sodium, fat, and total calories; the lack of sufficiently frequent and vigorous physical exercise, and smoking (Kanel, 1983; HMSO, 1992). CHD encompasses a group of clinical conditions ranging from asymptomatic disease to angina pectoris, acute myocardial infarction, and sudden death. It is one of the main causes of death in England (140,509 in 1989 - 26% of all deaths), and is also the main single cause of premature death (to age 65). It is estimated that CHD related illness takes up some 5000 National Health Service (NHS) beds everyday; accounts for around 2.5% of total NHS expenditures; and results in about 35 million lost working days (HMSO, 1991). Cardiovascular and related

diseases cause almost 50% of all deaths in the United States each year, CHD alone accounting for nearly 28% of adult mortality (Smith & Cestaro, 1992). In Kuwait, of the 4711 registered deaths in 1985, 1685 were related to CHD (Kuwait Ministry of Planning, 1987).

Certain biological changes have been proposed to explain how physical activity may help inhibit development of CHD. The majority of these mechanisms enhance the oxygen delivery capacity of coronary arteries and prevent the development of myocardial ischemia (Haskell, 1984). Results suggesting physical activity as a way to reduce CHD must always be issued with cautions and limitations. There are researchers who doubt the results of any such study and contend the reason that physically active people have fewer heart attacks is because their cardiovascular systems were inherently stronger than the men who did suffer heart attacks. The fact that one group exercised more did not actually have a direct bearing on the disease. Active people were more active because their stronger hearts allowed activity whereas the less active person had a weaker system that did not (Bouchard & Shepard, 1994). Self-selected inactivity, owing to genetic influence or pre-existing disease may account for some discrepancies within studies but in various reports the investigators examined this phenomenon in their data analyses but still found exercise to be of significant benefit (Blair, 1988; Blair, 1994; Kahn, 1963; Paffenbarger & Hale, 1975; Powell, et al., 1987).

Diseases of the heart are not contagious; there is no injection that will keep them from striking any individual at any time. It is one of the disadvantages associated with a technologically advanced, but predominantly sedentary society. However, men who are moderately active generally exhibit fewer clinical manifestations of CHD, than their sedentary counterparts; when a cardiac event does occur it is generally less severe in an active person and, in general, appears at a later age (Costas, Garcia-Palmieri, Nazario & Sortie, 1978; Morris, et al., 1980; Paffenbarger, et al., 1978; Paffenbarger, Hyde, Wing, Lee & Kampert, 1994). Many

population studies show a very significant difference in CHD between active and sedentary individuals, some indicate encouraging trends, while others find no difference (Froelicher & Oberman, 1972; Paffenbarger, et. al., 1978;). There are no studies which indicate active individuals have a higher rate of CHD (Haskell, 1984). While some studies demonstrate that physical activity may be beneficial in reducing the risk of CHD there has yet to be a study which is able to demonstrate an absolute cause-and-effect relationship (Haskell, 1984).

A common finding in many studies that show the risk of CHD to be reduced for an active individual is that the greatest difference in risk is between the moderately active and the totally sedentary. There is very little difference in preventive benefit between the moderately active and the extremely active. A person can therefore conclude that you do not have to be a marathon runner to be able to derive health benefits from physical activity (Haskell, Montoye & Orenstein, 1985).

3.6 Physical Activity and Obesity:

"Obesity results from dietary energy intake chronically in excess of energy expenditure, and so is related to both diet and physical activity" (HMSO, 1992, p. 55). It is well known that obesity is associated with a number of health problems (Angel 1978; Angel & Roncari 1978). These problems include impairment of cardiac function due to an increased load on the heart (Alexander & Peterson, 1972); hypertension (Bachmann, Freschuss, Hallberg & Melcher, 1972; Chiang, Perlman & Epstein, 1969; Stamler, Stamler, Riedlinger, Algera & Roberts 1978); diabetes (Stein & Hirsch, 1972; West, 1978); respiratory dysfunction (Burwell, Robin, Whaley & Bicklemann, 1956); abnormal plasma lipid and lipoprotein concentrations (Matter, Weltman & Stamford, 1980; Rossner & Hallberg, 1978; Weltman 1983); and impairment of physical work capacity (Katch & McArdle, 1977). As a result of this information physicians frequently prescribe weight reduction programmes for their overweight patients (Weltman, 1984).

A recent British governmental dietary and nutritional survey of British adults revealed one in three Britons are overweight, and one in 12 are obese. Peters (1994) suggests that if trends toward obesity continue levels of obesity in Britain could double by 2005. In America it is now estimated that approximately 58 million adult; 26 million men and 32 million women between the ages of 18 and 79, are obese or overweight, which is over a third (33.4%) of the US adult population. Childhood obesity rates have increased substantially since 1980 with 21% of all 12 to 19 year olds, one in five teens, are now significantly overweight (NASPE News, 1995). In Kuwait results are very similar to those in the UK and America; within the adult Kuwaiti population 34% of men and 59% of women are considered obese (Al-Shawi, 1985). Al-Hooti and Eid (1984) found that 18-27% of school age children are obese. Obesity frequently begins in childhood. About 1/3 of today's obese adults were overweight children, and an obese child is at least 3 times more likely than another to become an obese adult. Peters (1994) reports that although the health hazards associated with obesity are well publicized, the general public appears to be, *"not aware of the risks...not concerned...or unable to effectively control their overweight (p.18)"*. Obesity is much more difficult to correct in adulthood, therefore the US. Department of Health Education and Welfare (1979 & 1990) suggests that major preventive efforts are best directed toward children and adolescents. Studies indicate that appropriate physical exercise helps maintain lean tissue while promoting fat loss. Total body weight and fat weight are generally reduced by endurance (aerobic) training programmes (Pollock & Jackson, 1977; Robbins, Powers & Burgess, 1994) whereas lean body weight remains constant or increases slightly (Weltman, Matter & Stamford, 1980). To derive maximum benefit from the exercise program the individual must perform appropriate physical activity at least 3 times a week for at least 20 minutes per session.

3.7 Physical Activity and Diabetes:

Exercise throughout history has been recognized for its ability to decrease the symptoms of hyperglycemia in many diabetic patients (Allen, Stillman & Fritz, 1919; Leon, et al., 1979; Wallberg-Henriksson, 1992). Regular performance of endurance type exercise in conjunction with a diet that maintains proper body composition can significantly contribute to the normalization of carbohydrate metabolism and may reduce the frequency or delay the onset of Type II, non-insulin-dependent diabetes. There seems to be a chronic training effect that increases glucose removal at any level of plasma insulin. This effect reduces insulin production requirements of the pancreas beta cells and may reduce insulin deficiency from developing with increasing age (Haskell, 1984). Tauton and McCarger (1995) state, *"...regular exercise, weight loss, and reduced calorie intake may be enough to achieve blood glucose control in type II diabetes"* (p. 42). Endurance exercise of moderate duration and intensity, five times a week, for 30 minutes at 50% to 70% of maximal oxygen uptake, seems to improve carbohydrate metabolism (Soman, Veikko, Deibert, Felig & DeFonzo, 1979; Tauton and McCarger, 1995). However people with Type I, insulin dependent diabetes, must be much more cautious when undertaking an exercise programme. Carbohydrate intake, insulin dosage, and blood glucose levels of type I diabetics must be carefully monitored before exercise (Horton, 1988; Wallberg-Henriksson, 1992)

3.8 Physical Activity and Hypertension:

Although it was previously thought that primary or essential hypertension were diseases of middle or old age persons, the fact is that there are many children and adolescents diagnosed as hypertensive. Harris and DelGrande (1986) found that of a test group of 1,500 teens, 7% had blood pressures readings above average for their age. The study further stated that it was probable that a significant number of those teenagers would be diagnosed as essential hypertensive in their adult years. Findings such as these have been found in many other studies on childhood hypertension

(Woynarowska, 1985; Buckley, 1982; Rowland, 1981). Individuals who are physically fit can be hypertensive, however, generally more active individuals tend to have lower systolic and diastolic pressures (Cooper, Pollock, Marin, White, Linnerud & Jackson, 1976). Non pharmacological treatments of moderate elevations in pressure include weight reduction, reduction of salt intake, stopping smoking and, the initiation of an exercise program (Hagberg & Seals, 1986).

Studies indicate that endurance type training by border-line or essential hypertensive patients results in lower blood pressure, with the decline usually greater in systolic than in diastolic pressure (Choquette & Ferguson, 1973; Roman, Camuzzi, Villalon & Klenner, 1981). Systolic blood pressure during sub maximal exercise has consistently been found to be lowered as a result of exercise training (Choquette & Ferguson, 1973). This training effect is not permanent; older subjects who had lowered pressure following training were re-tested without exercise three days later. They no longer had a reduced systolic pressure (Barry, Daly & Pruett, 1966). The mechanisms through which blood pressure is reduced as a result of exercise is not clear. The major hypothesis is a decrease in sympathetic nervous system activity reflected by a decrease in circulating plasma catecholamine levels (Haskell, 1984). The predominant flaw of studies that indicate reduced pressures is that they lack an adequate control group (Seals & Hagberg, 1984). Another factor that may distort results is that in some studies there was significant weight loss due to training. This may indicate that its not the training per se, but rather a reduction of weight, and consequently a reduction of stress on the cardiovascular system (Hagberg & Seals, 1986). Cooper, et al. (1976) found that even after statistical adjustments for obesity had been made, more active individuals still had lower pressures. Blood pressure reduction following physical training has been documented in adults, however, studies involving training programs for hypertensive children recorded no significant alterations in resting levels (Pate & Blair, 1978). Fixler found a large degree of overlap between blood pressures of hypertensive and normotensive teenagers during exercise programs. It was recommended that hypertensive children need not be

restricted from physical activity unless excessively high rises in blood pressure were reached during exercise testing (Fixler, 1978).

3.9 Physical Activity Levels of Children:

In the UK it is often lamented that there is an insignificant amount of information about the physical activity levels of the nation's youth, yet there is great interest in both the private and public sectors. The Sports Council, with programmes like the 'Live! Time' initiative shows young people the increasing opportunities for them to take part in sport and recreational activities, thereby encouraging participation in sports by people of all ages. The Department of Education and Science and the Department of Health work together to ensure the coordination of health initiatives with local authorities, thereby promoting higher levels of physical activity within the general public. The Health Education Authority's programmes such as "Look After Your Heart" and "Health in Old Age" emphasize the individual health benefits of physical activity (HMSO, 1991). The Allied Dunbar National Fitness Survey, a first of its kind national survey, which includes data on participation and effectiveness of different types of exercise, was jointly funded by the Department of Health, the Health Education Authority, the Sports Council and Allied Dunbar (Sports Council & Health Ed. Authority, 1992). Through the cooperation of these organizations a framework for further research in the area of physical activity and health is being built. Longitudinal national studies into young peoples lifestyles has been undertaken by the Schools Health Education Unit, at the University of Exeter, since 1986. This unit under the direction of John Balding publishes yearly compilations of the health habits of very young, and young people in Great Britain. The information contained in these books is a great source of support for curriculum development in health education for a wide variety of age groups.

> *"The purpose of all the surveys is to provide reliable data for individual schools and District Health Authorities over a wide range of health issues, against which they can (1) decide priorities, (2) allocate resources objectively, and (3) monitor change"* (Schools Health Education Unit, 1994, p. 52).

Besides these are a myriad of private organizations dedicated to the research and development of the concept of health and physical activity. The Physical Education Association of the United kingdom (PEA UK) is a leading supporter of health promotion through physical education in the private sector. PEAUK, through its' publications, seminars and conventions, strives to inform both teachers and physical education researchers of the changes within the field of physical education. The national curriculum, which has not been settled for several years, is often scrutinized and clarified. In addition the PEAUK have a National Research Centre at the University of Exeter under the supervision of Professor Neil Armstrong.

> *The PEAUK Research Centre aims to:*
> - *Initiate research in physical education and disseminate findings*
> - *Facilitate the continuing education of physical education students and teachers.*
> - *Provide positive research environment for staff and postgraduate students.*
> - *Author books, pamphlets and papers*
> - *Edit a Research Supplement to the British Journal of Physical Education*
> - *Raise the awareness of people towards physical education*

> *(BJPE, summer 1994, p.7)*

Unfortunately in Kuwait interest in youth physical activity levels and their influence on the future of the nation's health is embryonic at most. There is little public support or information about physical activity for the sake of individual health. The activities organized by the Sports Authority are directed at those people who are already engaged in sports activities in the various clubs. There is great value placed on the skilled athlete, national clubs which may bring athletic honor to the country receive public funding which ensures quality training and state of the art facilities. There are various associations for sport such as those for soccer, handball, and volleyball; the Kuwait Olympic Committee is also an organization which supports

physical activity, but these organizations are also directed toward national and international team competition rather than individual participation in physical activity for health.

There is very little longitudinal information on the physical activity levels and health habits of children and adults in the UK. Information on youth health related behaviour available from the work of the Schools Health Education Unit is unique. The implementation and analysis of the surveys has been in full scale operation for nearly ten years and the information in the units data banks now includes information gleaned form more than 300,000 pupil's survey results since 1982 (Schools Health Education Unit, 1994).

The British government has very little longitudinal information about the health and lifestyle behaviours of its people. I rely heavily on the work of the Schools Health Education Unit information to present pertinent facts about youth activity levels. In addition, to give the reader further understanding of the magnitude of the problems facing governments in encouraging activity in its younger population, information available from America which has been conducting research and longitudinal studies into this area since the 1950's, will be presented. While the American information can only be used as a point of interest and non-specific comparison, the American and British culture while different are arguably more similar than many countries.

The US government in its publication 'Healthy People 2000 National Health Promotion and Disease Prevention Objectives' (US-DHHS, 1990) outlined its' public health goals for the year 2000. Physical activity is included as a priority area of influence on the lifestyle and health of the American people. There is great interest in the work being done in the US. which is aimed at discovering answers to the intricacies of lifestyle, physical activity, and health. Interest is particularly keen regarding the

health status and lifestyle of youth, which will, in time, affect the future health and productivity of the nation.

In the UK there are numerous respected professional organizations which support and encourage physical activity for its potential benefits on individual health. All concerned support the hypothesis that physical activity will have a greater impact if it's incorporated in an individuals life as early as possible. Strong & Dennison (1989) state, *"the way to prevention is to reduce the severity and incidence of adult cardiac disease by promoting healthy lifestyles in children (as well as) adults."* Berg, Swanson & Juhl (1992) suggest that to lower the incidence of CHD and other related lifestyle diseases methods of intervention should be implemented early in life.

Most adults observe children and believe them to be extremely active. However many international studies find to the contrary. Gilliam (1982) found that of children who were monitored for 12 continuous hours, only 2% were found to spend time involved in high intensity activity. This study also showed that girls are even less active than boys and that during school days activities declined even further. Armstrong (1989) found that half of the girls and one third of the boys had not exercised aerobically for even ten minutes in an entire week. Gilliam's study also showed that if girls and less active boys are given the opportunity they are more than able to increase their activity level to that of the more active boys. Therefore while physical fitness is not achieved without an organized format of activities, physical fitness can be achieved by everyone. Findings from the 1985 American School Fitness Survey, which tested 18,857 young people aged 6-17 years on 9 fitness tasks, revealed scores very similar to those of 1975. Among the findings:

- 40% of boys age 6-12 cannot do more than one pull-up; 25% cannot do any.
- 40% of boys age 6-15 cannot reach their toes in a test of flexibility.
- 30% of boys age 6-12 cannot run a mile in less than 10 minutes.(PCPFS, 1985).

Data such as these are considered *'very poor'* and *'alarming'* in America, but in the UK and Kuwait there is no data similar to this, there is a need to address this gap in national research concerns. While there are various proposals as to why children are doing so poorly in national tests, there is no provable single causes. Some say the today's lifestyle with all the labour saving devices reduces fitness levels. Also, there are many types of passive entertainment such as TV and video games which replace vigorous exercise.

Increased international interest in physical fitness in recent years has been due to data which directly relates increased levels of physical activity to decreased rates of illness and morbidity (Bouchard et al., 1994).

The 1985 Youth Fitness Survey showed very little improvement in fitness levels since the previously administered test in 1975. When asking "WHY" these results are so low many researchers stipulate that, in addition to a progressively sedentary lifestyle fully equipped with labor saving devices and passive entertainment, is the personal opinion of what fitness means and what it is. It is difficult to convince a parent of a child between the ages of six and 17, that the child may not be physically fit or active enough. In a Harris survey commissioned for Rodale Press' Children magazine (Nov. 14-30, 1986), it was revealed that 9 out of 10 parents believe their children are physically fit. Nearly 3/4 of parents believe their children are the correct weight, have optimal cardiovascular fitness and, have the right amount of physical education classes (ARAPCS, 1987). Many people consider absence of disease as fitness. Researchers have to remember that most people consider a child to be fit if he isn't ill and is within the norms for height and weight (McGammon, 1970). This is generally not the definition that physical educators would accept. An excellent definition for physical fitness is in the book Physical Fitness: A Way of Life (Getchell, 1992). Getchell defines physical fitness as, *"the capability of the heart, blood vessels, lungs, and muscles to function at optimal efficiency"* (p.4). If fitness is the ability of all vital body functions to operate optimally, then unfitness would be the

inability of those same body functions to operate optimally. By Getchell's definition many children are, by definition unfit.

3.10 Support for Physical Education:

One important component of lifestyle is the choice made regarding physical activity. In the Health of the Nation (HMSO, 1991) no recommendations for physical activity were included. Although physical activity was considered to be beneficial to individual health. In the 1992 Strategy for health in England it was stated that physical activity can be a help prevent and manage certain debilitating diseases and that the government will issue guidelines for physical activity in the near future.

In 1980 the US. Dept. of Health and Human Services strongly endorsed the need to implement health-related fitness programs for children in public schools. Of the 15 priority areas addressed in the publication 'Promoting Health Preventing Disease: Objectives for the Nation', US. Dept. of Health and Human Services, 1980, physical fitness and exercise was one. The work group on physical fitness and exercise noted that "the increasing costs associated with health care will compel public policy to emphasize measures such as physical fitness to enhance health" (US. DHHS, 1980). Suggested service measures included "...providing physical fitness and exercise programs to school children, and ensuring that those programs emphasize health-related activities for all children rather than just competitive sports for relatively few" (US. DHHS, 1980). The report set forth 11 specific objectives in the area of physical fitness and exercise, included were five objectives focused on children and youth. These objectives are based on the assumption of a positive relationship between physical activity patterns in children and adolescents and physical activity patterns in adults. Although this correlation is not clearly established it is a reasonable assumption at this time. Through the 1990 objectives it can be surmised that the US government feels that one of the greatest potentials for disease prevention is through proper physical activity started at an early age.

Research results which have been recognized from the 1950's to the present indicate that there are severe health risks inherent to inactivity. Despite the fact that physical education was first introduced to promote health through exercise, since World War II the focus of physical education class shifted from health fitness to motor performance (Pate & Corbin, 1981). The change in emphasis was the result of a study published in 1954 by Kraus and Hirschland.

In America Hovell, Buskirk, Sharkey & McLure (1978) found activity levels for elementary school children too low to contribute to aerobic fitness. British children share the inactivity pattern of American school children. Armstrong (1989) found 50% of girls and over 25% of boys were not involved in any aerobic activity for more than 10 minutes per week.

3.11 Health Based Physical Education:

In today's fast changing fully automated society why bother with physical activity? Physical education is an inconsequential subject within the curriculum and its' time allotment could easily be halved with no great loss. Sadly, these sorts of statements about physical education are not unknown when boards of governors are trying to adjust school curriculum to match dwindling budgets (Comer & Sparkes, 1992; Wilcox, 1987).

Physical education is probably the most misunderstood course within the curriculum. It is often marginalised as 'gym' or games. Rogers (1985) states that this type of nomenclature can be quite significant,

> *"...words are symbols by means of which we guide the thoughts and actions of other persons...it is as important to attach right meanings to words as to find the right words to express our meaning (p. 59)."*

For anyone who takes the time to explore what a first rate physical education programme includes, they will discover that physical education is not an inconsequential 'extra', but rather a very important aspect of total education. Many misconceptions of physical education can actually be placed upon the misnomer 'games'. Physical education is often considered a springboard for elitist athletics, leading into competitive sports. Many of today's adults have vivid memories of physical education lessons full of humiliation and a sense of failure (Griffiths & Cullingford, 1990; Biddle, 1987; Thomas, 1985). As part of the school curriculum a quality physical education lesson teaches confidence and competence, builds skills, and helps children to learn to respect the power and mobility of the human body (Roberts, 1986). Excellence in such a programme is not limited to the football pitch, and the goal posts are not its' central feature. Unfortunately, in the reality of today's economics and budget cuts "PE" and "games" are often squeezed to the sidelines. In actuality physical education is a programme that could enhance the entire life of the student, and deserves more respect (Watkins, 1985).

The Physically Educated Person:

"You're not educated unless you're physically educated", is the motto of the Canadian Alliance for Health, Physical Education, Recreation, and dance (CAHPERD). But what is meant by 'physically educated'? In 1986 the National Association for Sport and Physical Education (NASPE), an association of AAHPERD, formed an Outcomes Committee whose responsibility it was to define a physically educated person. The five component definitional statements are as follows:

A PHYSICALLY EDUCATED PERSON:

- HAS learned skills necessary to perform a variety of physical activities
  1. moves using concepts of body awareness, space awareness, effort, and relationships.
  2. demonstrates competence in a variety of manipulative, locomotor, and non-locomotor skills.

3. demonstrates competence in combinations of manipulative, locomotor and non-locomotor skills performed individually and with others.
4. demonstrates competence in many different forms of physical activity.
5. demonstrates proficiency in a few forms of physical activity.
6. has learned how to learn new skills.

- IS physically fit.
  7. assesses, achieves, and maintains physical fitness.
  8. designs safe, personal fitness programs in accordance with principles of training and conditioning.

- Does participate regularly in physical activity.
  9. participates in health enhancing physical activity at least three times a week.
  10. selects and regularly participates in lifetime physical activities.

- KNOWS the implications of and benefits from involvement in physical activities.
  11. identifies the benefits, costs and obligations associated with regular participation in physical activity.
  12. recognizes the risk and safety factors associated with regular participation in physical activity.
  13. applies concepts and principles to the development of motor skills.
  14. understands that wellness involves more than just being physically fit.
  15. knows the rules, strategies and appropriate behaviours for selected physical activities.
  16. recognises that participation in physical activity can lead to multi-cultural and international understanding.
  17. understands that physical activity provides the opportunity for enjoyment, self-expression and communication.

- VALUES physical activity and its contributions to a healthful lifestyle.
  18. appreciates the relationships with others that result from participation in physical activity.
  19. respects the role that regular physical activity plays in the pursuit of life-long health and well-being.
  20. cherishes the feelings that result from regular participation in physical activity. (NASPE, 1990).

The five parts of this definition are related to the psychomotor, cognitive and affective learning domains found in physical education. The committee states that it is an 'all or none principle' definition, the components are interactive and all sections equally important. Rogers (1985) clearly illustrated that physical education is indeed a multi-dimensional subject, please refer to figure 3.1.

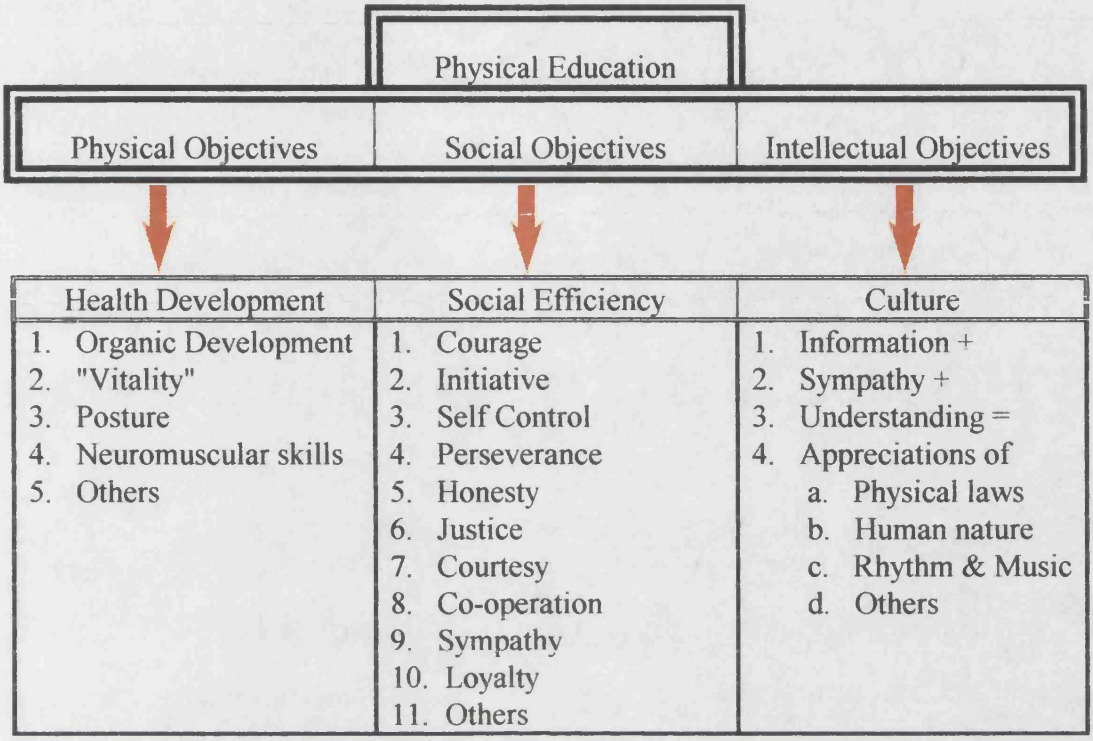


Figure 3.1 Objectives of physical education (Rogers, 1985).

Both NASPE and Rogers emphasize that physical educators must encourage children to think as well as be active within the physical education lesson. This approach to teaching physical education, whether it is called: Health-based Physical Education, Health-focus in Physical education, Health-related fitness, Health-related Physical Activity, or Health-related Exercise, is trying to affect knowledge and attitude as well as physical fitness (Biddle, 1987; Almond, 1990). Only with knowledge and understanding can the students accept and incorporate health-related physical activities into their life once they leave school.

Health-related Curriculum:

Sobie (1979), when discussing how to approach the promotion of health in schools, likens educators to Alice-in-Wonderland. Alice in a quandary asks,

"Cheshire-puss, would you tell me please which way I ought to go from here?"

Cheshire-puss answers cryptically, *"that depends a good deal on where you want to get to"*. While many teachers appreciate the role physical education can play in creating positive attitudes toward lifetime physical activities, they are unsure of the exact way to approach the subject.

Almond (1987) voiced concern over the trend in physical education which was to rather hope that the physical education lessons would somehow encourage the students to remain physically active once they left school. This situation is totally inadequate and of benefit to no one, a curriculum policy of this type is not fulfilling its potential. Almond (1990) further supports the inclusion of health-related activities and education within the schools physical education lessons when he states:

> *"As exercise and purposeful physical activity represent a unique and significant part of physical education, schools could be one major agency for promoting health-related exercise because they can provide access to opportunities which enable pupils to learn to recognise the association of exercise with health, appreciate its significance and find satisfaction in participation (p. 18)".*

What then is appropriate and necessary to include in a health-related physical education curriculum? Fox and Whitehead (1987) recommend that we might want to include the ***student,*** someone who is predominantly missing from much of the physical education curriculum.

> *"As a profession, we have done our best to mould and shape the traditional sports model to ensure that students have gained from their experiences and involvement. As a result of decades of practice there have been undoubted improvements and successes, but this sports model is fraught with dangers, not least of which is when the dog bites the hand of the master and becomes the master himself. In too many schools, sports are still taught as an end in themselves,* ***often*** *as a means of prestige and* ***frequently*** *at the expense of a large percentage of the student core." (p. 94).*

The service provided by physical education must include all students and must adequately educate them. The curriculum should revolve around the needs of the

pupils. Physical education must develop pupil's cognitive as well as motor skills; its main responsibility is to produce students who are physically fit and intellectually aware of why and how to be physically active. Figure 3.2 clearly illustrates the physical/intellectual and student/physical education interconnections.

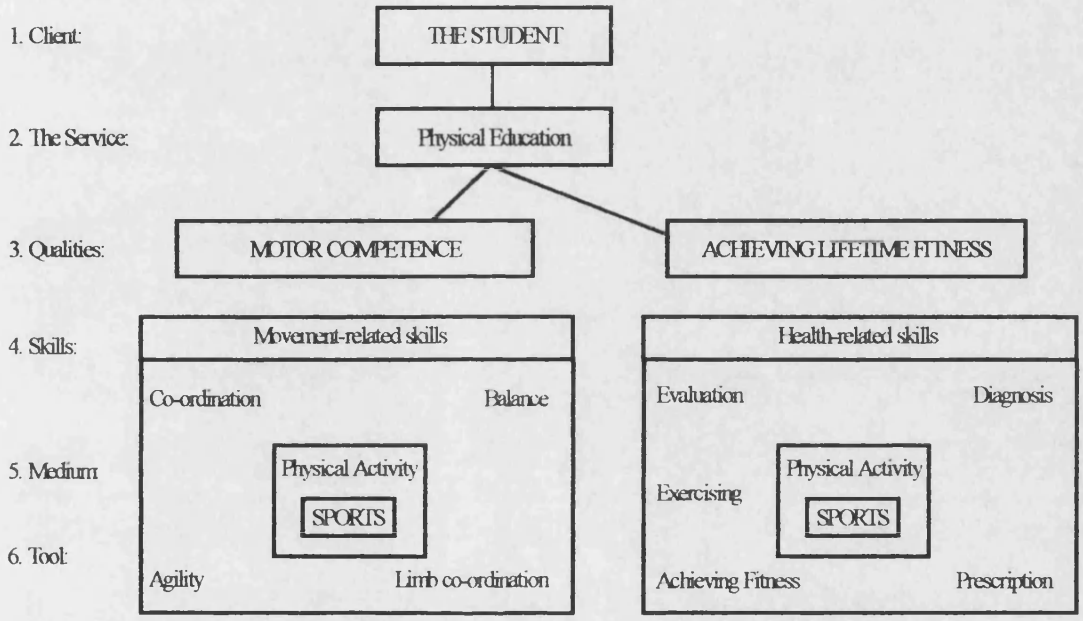


Figure 3.2 A student-centred model of physical education (Fox and Whitehead, 1987).

3.12 British Physical Education Curriculum:

The physical education curriculum in England and Wales has undergone monumental changes in the past five years. The debate over academic direction and educational standards during the early 1980's resulted in the Educational Reform Act (ERA) of 1988. ERA established a statutory national curriculum for all students aged 5 to 16 years. Previous to the implementation of the ERA, there was, according to Murdoch (1991), *"...concern in the (physical education) profession that groups external to our subject were posing a real threat to its existence."* (p. 23). The inclusion of physical education as a mandatory course of study in the National

Curriculum for England and Wales was welcomed by physical educators who saw it as a major step toward the recognition of the value of physical education upon the student's total education (Casbon & Gibbon, 1991; Murdoch, 1991).

In this section the basic structure of the national curriculum will be described and the physical education curriculum for England and Wales presented. The overall physical education recommendations for key stage 4, the age of the students which participated in this project, will be given in detail.

Due to the detailed nature of the information to be included in this section I rely heavily upon several official documents produced by the Department for Education in England and Wales, the Department for Education and Science and the Welsh Office, and the National Curriculum Council.

The Structure of the National Curriculum

The National Curriculum applies to pupils of compulsory school age in maintained schools, including grant-maintained and grant-maintained special schools. It is organised on the basis of four **key stages** (The key stages are defined precisely in section 3(3-6) of the Education Reform Act 1988, as amended by the Education Act 1993), which are broadly as follows:

	Pupils' ages	**Year groups**
Key Stage 1	5-7	1-2
Key Stage 2	7-11	3-6
Key Stage 3	11-14	7-9
Key Stage 4	14-16	10-11

(Department for Education England and Wales, 1995, p. v).

In England the following subjects are included in the National Curriculum at the key stages shown:

Key Stages 1 and 2	English, mathematics, science, technology (design and technology, and information technology), history, geography, art, music, and physical education.
Key Stage 3	as at Key Stages 1 and 2, plus a modern foreign language
Key Stage 4	English, mathematics and science; from August 1995, physical education; and, from August 1996, technology (design and technology, and information technology) and a modern foreign language.

(Department for Education (1995) p. v.).

Physical Education in the National Curriculum:

Physical education is included in the National Curriculum for England and Wales and as such it must follow areas of study prescribed by the national curriculum documents. The Department of Education and Science (1989) proposes the following as the aims of physical education within the public school system:

"Physical education in schools aims to develop control, coordination and mastery of the body. It is primarily concerned with a way of learning through action, sensation and observation." (p. 1).

The aims of physical education are to:

- *develop a range of psycho-motor skills*
- *maintain and increase physical mobility and flexibility*
- *develop stamina and strength*
- *develop understanding and appreciation of the purposes, forms and conventions of a selection of physical activities*

- *develop the capacity to express ideas in dance forms*
- *develop the appreciation of the concepts of fair play, honest competition and good sportsmanship*
- *develop the ability to appreciate the aesthetic qualities of movement*

(Department of Education and Science, 1989, p. 1).

General Requirements for Physical Education Key Stages 1-4

Physical education should involve pupils in the continuous process of planning, performing and evaluating. This applies to all areas of activity. The greatest emphasis should be placed on the actual performance aspect of the subject. The following requirements apply to the teaching of physical education across all key stages (Department for Education, 1995, p. 2).

- ***1. To promote physical activity and healthy lifestyles, pupils should be taught:***

  a. *to be physically active;*

  b *to adopt the best possible posture and appropriate use of the body;*

  c *to engage in activities that develop cardiovascular health, flexibility, muscular strength and endurance;*

  d *the increasing need for personal hygiene in relation to vigorous physical activity.*

- ***2. To develop positive attitudes, pupils should be taught:***

  a *to observe the conventions of fair play, honest competition and good sporting behaviour as individual participants, team members and spectators;*

  b *how to cope with success and limitations in performance;*

  c *to try hard to consolidate their performance;*

  d *to be mindful of others and the environment.*

- *3. To ensure safe practice, pupils should be taught:*

  a to respond readily to instructions;

  b to recognise and follow relevant rules, laws, codes, etiquette and safety procedures for different activities or events, in practice and during competition;

  c about safety risks of wearing inappropriate clothing, footwear and jewelry, and why particular clothing, footwear and protection are worn for different activities;

  d how to lift, carry, place and use equipment safely;

  e to warm up for and recover from exercise.

(Department for Education, 1995, p. 2).

Key Stage 4 Programme of Study

Pupils should be taught a minimum of two different activities; at least one of the two activities chosen should be a game. All aspects of the programme of study relating to the appropriate area must be taught for each activity, even if both activities are drawn from the same area.

Throughout the key stage, pupils should be given opportunities to participate in frequent physical activity conducive to a healthy lifestyle. They should be taught:

- *to plan, undertake and evaluate a safe health-promoting exercise programme;*
- *to show understanding of the principles involved.*

(Department for Education, 1995, p. 9).

Areas of Activity

The activity specific Programmes of Study are defined as six aspects of activity through which pupils develop the competence to perform in a range of

movement contexts, and learn to plan and evaluate their own performance and those of others (Office for Standards in Education, 1993, p. 22).

The following are the six activities for Key Stage 4 Programme of Study:

		Pupils should be taught:
1. Games	**a**	to play the full recognised version of a competitive game and to undertake a variety of roles, *e.g. performer, coach, official*;
	b	to use increasingly advanced strategies and tactics of competitive play, and adapt these to the strengths and limitations of other players;
	c	increasingly advanced techniques in a selected game(s), and how to improve performance;
	d	to co-operate with others in regular practice in order to refine their techniques;
	e	the rules/laws of the game(s) followed, including those of specific competitions and how to apply them.
2. Gymnastic activities	**a**	to plan and implement a training schedule relevant to the gymnastic activities undertaken;
	b	increasingly advanced techniques and how to improve performance;
	c	to apply principles, rules and criteria for evaluating performance.
3. Dance	**a**	to compose and perform, accurately and expressively, increasingly complex and technically demanding dances that successfully communicate the artistic intention;
	b	to perform and create dances in a range of styles, showing understanding of form and content;
	c	to design and evaluate aspects of production for their own compositions;
	d	to evaluate aspects of dance, including choreography, performance, cultural and historical contexts and production.

4. Athletic activities	**a**	to plan, carry out and evaluate an effective personal training schedule for a selected event(s).
	b	increasingly advanced techniques in a selected event(s), and how to improve performance;
	c	to apply strategies/tactics in their chosen event(s).
	d	to extend their personal capabilities and evaluate performance in the selected event(s).
5. Outdoor and adventurous activities	**a**	to prepare for and undertake a journey safely, encompassing one or more activities, *e.g. canoeing, fell walking, rock climbing*, in an unfamiliar environment;
	b	to develop their own ideas by creating challenges for others;
	c	increasingly complex techniques and the procedures appropriate to the activity or activities undertaken;
	d	the effects of nutrition and climatic conditions on the body, through the activity or activities undertaken, and be aware of and respond to changing environmental conditions.
6. Swimming	**a**	the rules for competition, and how to prepare for, and participate in, races in the various sprint, distance, medley and team events;
	b	to develop further the application and evaluation of the principles and practice of rescue and resuscitation in water-based activities;
	c	to develop, apply and evaluate their skills in selected water-based activities. (Department for Education, 1995, p. 9-10)

Attainment Target: End of Key Stage Descriptions
Key Stage 4

There is a single attainment target for physical education designed to encompass the three attainment targets suggested by the Physical Education Working Group. The three components represent progressive learning in physical education. They are as follows:

- ***planning and composing*** *- the knowledge, skills and understanding required to plan and structure performance;*

- ***participating and performing*** *- the knowledge, skills and understanding required to take part; and*

- ***appreciating and evaluating*** *- the knowledge, skills and understanding required to be able to appreciate the physical activity* (Department of Education and Science, 1991, p. 17).

"The attainment target for physical education is the sum total of all the end of key stage statements. In meeting the attainment target pupils should be able to demonstrate the knowledge, skills and understanding involved in areas of activity encompassing athletic activities, dance, games, gymnastic activities, outdoor and adventurous activities and swimming. The areas of activity which have to be covered vary according to key stage" (Department of Education and Science and the Welsh Office, 1992, p. 2).

"Pupils demonstrate increasingly refined techniques in their selected activities. Their performance is more consistent and effective. They anticipate responses from others and use this information to adapt their own performance. They undertake different roles, such as performer, coach, choreographer and official. They evaluate accurately and make judgments using relevant technical terms. They regularly participate in health-promoting physical activity, and show an understanding of the principles used to prepare and monitor an exercise programme for a healthy lifestyle" (Department for Education in England and Wales , 1995, p.11).

The National Curriculum Council (1992) also stipulates that there are several areas of cross-curricular education available to the physical education teacher.

Five themes are regarded as having an important role to play in helping to prepare pupils for an active and informed adult life. These are:

- *health education*
- *careers education*
- *environmental education*
- *education for citizenship*
- *economic and industrial understanding* (National Curriculum Council, 1992, p. G1).

"Aspects of each theme can be taught in physical education, but health education (in particular the effects of exercise on health) is most prominent... A good physical education programme can have a significant influence on long-term health, attitudes and behaviour. It can:

- *promote healthy growth and development;*
- *motivate pupils to participate in a range of physical activities;*
- *encourage the development of a lifelong commitment to a physically active lifestyle, thereby reducing the risk of future disease and infirmity;*
- *assist in the management of existing conditions, e.g. asthma;*
- *promote mental well-being, good mood, and positive self-image;*
- *provide knowledge required for safe participation in and effective planning of individually appropriate exercise programmes"* (National Curriculum Council, 1992, p. G1).

3.13 Kuwaiti Physical Education Curriculum:

Unlike education in many of the developed countries, structured education for all is a relatively new undertaking in Kuwait. While education has of course been present for centuries, it was limited to religious studies or to the core courses of reading, writing and mathematics. Only after the discovery of oil and its' subsequent wealth for the nation was public education for all children initiated (Kuwait Ministry of Information, 1989). Girls as well as boys were included in the availability of

education, although there were considerably fewer girls than boys enrolled (Kuwait Ministry of Information, 1989). The public school system in Kuwait is divided into three branches, the elementary branch; the intermediate branch; and the secondary branch. Students spend four years within each branch of the system. Physical education or 'sport in education' was introduced by the director of the Department of Education, Sheik Abdul-Al-Jaber Al-Sabah, known as the father of Kuwaiti sports in 1936 (Behbehani, 1992). Sadly, today there is very little respect for physical education in the educational system, and time allocation for physical education decreases throughout the school years. While a student might participate in a maximum of three lessons in elementary school, that time decreases to one lesson during the last two years of secondary school. Additionally there is no evaluation system within physical education, therefore participation or non-participation makes no difference upon the students final report. Behbehani (1992) also notes that the pressure to succeed in other courses becomes so intense at the end of year exam time that physical education lessons are routinely cancelled in order to provide 'real' teachers more time to prepare the students for exams in 'important subjects'.

Behbehani (1992) and Kamiyole (1993) state that another barrier to participation in physical education is the influence of religion. Kuwait is a predominantly Muslim country and as such there are indeed certain barriers to participation. These barriers however, are almost exclusive to the female population, and usually address modesty in action and dress and are in no way insurmountable, with a bit of effort and ingenuity on the part of the physical education teacher. It is also contended that the students will learn to pay so much attention to sports and games that he will be lax in his religious duties. This is especially so in regard to the five daily prayer times. Television and radio transmissions are interrupted at prayer time to remind people of their obligations, and that prayer is more important than frivolous entertainment. Some concerned organizations contend that if physical activity is encouraged children will learn to carry on at play rather than pray. It is believed that this habit of disregarding prayer for entertainment will be continued into

adulthood, culminating in a disregard for religious responsibilities. Kamiyole (1993) represents a typically African Muslim society and viewpoint, with rather dictatorial governmental policies. Often times the general public in these countries is poorly educated and are told by their government that certain activities are irreligious and must be avoided. This type of control is usually in favour of the government, and not necessarily based in fact. Behbehani (1992) states that an indicator that the Kuwaiti government is undermining physical education is apparent by the fact that governmental officials place girls in schools which are ideally suited for boys. His example was that while there was a playing field at a girls school, the neighbouring boys school had none. While that is indeed a bad situation for the boys, I personally fail to see why the girls do not need a playing field, female participation in physical activity in schools is as necessary, if not more so than participation by boys. It is culturally acceptable for boys to physically active in public, this is not the case for girls. Girls need as much support as possible to become physically active. I find that rather than undermining activity, the provision of sports fields for girls indicates support by the government **for** physical activity.

The Physical Education Curriculum for Kuwaiti Public Schools.

The Kuwaiti Ministry of Education-Department of Curriculum and Text Books is responsible for formulating the physical education curriculum. There is no encouragement of innovation on the part of the teacher, they are to teach only that which is included in the set curriculum (Kuwait Ministry of Education, 1988).

The most striking quality of the physical education curriculum in Kuwait is repetition. Elementary, intermediate, and the first two years of secondary school all have physical education twice a week and are all provided with the exact same curriculum. All activities are the same as well as the amount of time dedicated to each. The last two years of secondary school physical education lessons are marked by the decrease in the amount of lessons per week from two to one. The activities

provided for these older boys is still the same as it was previously, there is simply less time allocated to the course. The Kuwaiti school year is divided into two sections of twelve weeks each.

Study Plan for School Boys in Elementary, Intermediate, and Years 1 and 2 of Secondary School:

Term One - First Six Weeks:

4 lessons of basketball

3 lessons of soccer

2 lessons of track and field

2 lessons of gymnastics

1 lesson to test physical fitness

Term One - Second Six Weeks:

4 lessons of Handball

3 lessons of volleyball

2 lessons of track and field

2 lessons of gymnastics

1 lesson to test physical fitness

Term Two - First Six Weeks:

4 lessons of soccer

3 lessons of basketball

2 lessons of track and field

2 lessons of gymnastics

1 lesson to test physical fitness

Term Two - Second Six Weeks:

4 lessons of volleyball

3 lessons of handball

2 lessons of track and field

2 lessons of gymnastics

1 lesson to test physical fitness

Study Plan for Secondary School -Years 3 and 4.

Term One - First Six Weeks:

2 lessons of basketball

2 lessons of soccer

1 lessons of track and field

0 lessons of gymnastics

1 lesson to test physical fitness

Term One - Second Six Weeks:

2 lessons of Handball

2 lessons of volleyball

1 lessons of track and field

0 lessons of gymnastics

1 lesson to test physical fitness

Term Two - First Six Weeks:

2 lessons of soccer

2 lessons of basketball

1 lessons of track and field

0 lessons of gymnastics

1 lesson to test physical fitness

Term Two - Second Six Weeks:

2 lessons of volleyball

2 lessons of handball

1 lessons of track and field

0 lessons of gymnastics

1 lesson to test physical fitness

(Kuwait Ministry of Education, 1988).

The Ministry has also formulated basic goals for all physical education lessons. It is understood that the goals should be achieved through the various age specific activities provided by the physical education curriculum. All goals should be achieved under the supervision of a qualified individual (physical education specialist) who understands his responsibility in helping develop the students in regard to the individual, society and humanity.

First Goal of Physical Education: Physical Development

Achieved from total physical fitness and includes:

A. Physical fitness
    1. Strength
    2. Speed
    3. Endurance
    4. Flexibility

B. Optimal Physiologic Function
    1. Circulatory system

2. Respiratory system
3. Nervous system
4. Digestive system

C. Motor Fitness
   1. Skill of movement
   2. Sports skills
   3. Agility
   4. Coordination

D. Development of Health Habits
   1. Nutritional habits
   2. Hygiene
   3. Health habits
   4. Posture

Second Goal of Physical Education: Mental Development

A. Gaining knowledge; learning/education.

B. Organization and analysis of knowledge.

C. Creativity and excellence in academic endeavours.

D. Adaptability.

Third Goal of Physical Education: Psychological Development

A. Stress reduction

B. Self-control

C. Courage

D. Watchful/cautious

Fourth Goal of Physical Education: Social Development

A. Social skills/graces

B. Cooperation

C. Self-esteem

D. Ability to compromise

E. Leadership

There are specific goals for each level of education. The following are the general and specific goals related to the secondary level physical education lesson.

The general goal for secondary school physical education is to provide the students with the chance or opportunity to gain and develop physical, social, psychological, and mental development which suits his stage of development. He/she should be able to adjust to various situations and succeed in his/her ambitions. He/she should gain sportsmanship and physical skills that help him to live in a democratic society.

The specific goals of physical education for secondary school are as follows:

1. Development and acquisition of sport skills;
2. Develop physical fitness;
3. Develop good posture;
4. Develop sport as a hobby;
5. Provide skilled athletes with opportunity to develop and progress to a higher skill level;
6. Respect of rules and cooperation and self-control toward other students and teachers;
7. Participation of students in organising and supervising activities;
8. Respect for others, i.e. fans and other competitors;
9. Healthy lifestyle;
10. Accept individual differences;

11. Opportunity to participate with high self-esteem;
12. Self-control;
13. Develop desirable physical habits (Kuwait Ministry of Education, 1988).

Any voluntary participation by the students in physical activity outside of the physical education setting should be encouraged. The Department of Education recognises that activities outside of the lesson can complement the physical education curriculum and enhance physical, psychomotor, and social development. The aim of these activities should be to:

1. Provide opportunity for the maximum number of students to participate;
2. Provide a chance to 'discover' talented students;
3. Develop leadership, cooperation and sportsmanship;
4. Develop skills of talented players;
5. Allow students to experience extra competition;
6. Develop motor skills;
7. Provide relaxation and entertainment;
8. Enhance relationships between authorities and parents;
9. Enhance quality of celebration activities;
10. Learning through participation;
11. Enhance overall health (Kuwait Ministry of Education, 1988).

The goals as set out by the Ministry of Education are laudable yet, with the curriculum provided it seems that they would be hard to achieve. There are no guidelines for the teachers on how to accomplish the goals and so there may be great variety in the delivery of the curriculum. This lack of direction comes at a high cost to the students, who cannot be properly educated if the teachers lack a strong framework to build upon.

3.14 Testing Within Physical Education:

> *"Assessment serves a number of functions. It supplies important information to the teacher; it gives an indication of the level of learning and the proportion of pupils who are finding the work too easy or too difficult and who therefore need to be directed towards more appropriately challenging activities. It can also indicate a poor class response caused by inappropriate organization or poor development of resources. Assessment can also help with the diagnosis of learning difficulties and point to ways of overcoming them" (Department of Education and Science, 1989, p. 20).*

Should there be testing within a health-related fitness programme? This is a topic that can spark hot debate between physical educators with opposing viewpoints (Jones & Bate, 1990). This situation is especially true in the UK, where health-related fitness is just beginning to take off. The term "health-related fitness" itself is a bone of contention for some in the field. While the term is used in America, Australia, and Canada, where this type of curriculum has been in place several years, many educators and researchers in the UK would prefer the term "health-related exercise", they believe that the word fitness, has negative connotations for the general public. Members of the Health and Physical Education Project (1991) who disagree with fitness testing within the physical education curriculum hope using the term "exercise" will limit the inclusion of fitness testing in physical education (Harris, 1991; Armstrong, 1987a; Shepard, 1982). While testing that involves copious amounts of physical activity time must be modified or abandoned, fitness testing which is properly administered can be a very valuable aspect of the curriculum (NASPE, 1990; Biddle & Fox, 1987; AAHPERD Test Manual, 1985). The final, and very necessary step to any curriculum is evaluation (McKenzie, 1988; Wulf & Shave, 1984; Pratt, 1980). Evaluation asks, *"What are the effects of the programme with regard to changes in knowledge, skills, attitudes and beliefs, and behaviour?"* (McKenzie, 1988, p. 153).

AAHPERD Health-related Fitness Tests:

During the days of the Roman Empire, the physical performance ability became almost a science. There was much concern about the effect of diet and exercise on the total health of the body (Willgoose 1961). During the early years of American physical education most physical educators were trained physicians (Willgoose, 1961). The physician/educator considered the relationship of anthropometric measures (height, weight, body build, skeletal proportions), lung capacity and muscular strength to health status, physical performance and, motor skills. Dr. Edward Hitchcock of Amherst College prepared early physical education standards in 1861. Dr. Dudley Allen Sargent of Harvard University was another pioneer in this field (Willgoose 1961). Hitchcock and Sargent were the first educators to include physical education classes for college students. Their single purpose was to promote student health through exercise (Pate & Corbin, 1981). Pate & Corbin (1981) state that although exercise within physical education was first introduced to promote health, since World War II the focus of physical education class shifted to motor performance. The change in emphasis was the result of a study published by Kraus and Hirschland (1954). In a comparison study of American and European children's abilities in tests of minimal muscular fitness, American children proved to be a very distant second. There was a failure rate by American children of approximately 58%, compared to a 9% failure rate among Austrian, Italian and Swiss children. Although the validity of these test results and sampling techniques were questioned by researchers there was still a wave of national attention and a demand that something be done. The most noted accomplishment was President Eisenhower's creation of a President's Council on Youth Fitness by executive order in 1956 (the name was changed to the President's Council on Physical Fitness and then to the present title of The President's Council on Physical Fitness and Sports). Following the President's lead the American Association for Health, Physical Education and Recreation (AAHPER) held a national meeting in September of 1956, in Washington DC., to discuss the fitness of American youth. An important outcome of this meeting was the establishment of the AAHPER

Youth Fitness Project, an attempt to both survey and encourage improvement in the fitness of American boys and girls (AAHPERD Test Manual, 1980). In February 1957 the AAHPER Youth Fitness Test became the first test with national norms to be developed by the physical education profession (AAHPERD Test Manual, 1980). The test included items which were selected on the basis that they:

- *were reasonably familiar*
- *required little or no equipment*
- *were not sex specific*
- *could be administered to all students within grades 5 through 12*
- *measured different components of fitness*
- *would allow self-testing by the students* (AAHPERD Test Manual, 1980).

Each test item was viewed as an indicator of strength or weakness on a specific component of fitness. There was little interest in a total test score. The committee members clearly equated youth fitness with motor fitness. An interesting point in the development of the 1956 AAHPER test is that although its impetus was the Kraus and Hirshland study, there is little resemblance or correlation between the two. In Kraus' Minimum Muscular Fitness Test the most frequently failed item was the toe-touch. The AAHPER Youth Fitness Test includes no such measure of low back/ hamstring flexibility (Pate, 1983). Between 1958 and 1975 several changes were made in the test battery, but generally the test and its goals were accepted by teachers and students alike. In 1979 it was estimated that approximately 20 million children per year were being tested with the instrument (AAHPERD Test Manual, 1980).

In the mid-1970s however, many members of AAHPERD became doubtful of the usefulness of the Youth Fitness Test. Although it had served its original purpose well, helping to establish physical fitness norms, exercise physiology research showed that speed and power performance are dependent on genetic factors (muscle fibre type) that are not particularly responsive to training Costill et al. (1976), nor are they health-related. On the other hand it has been shown that the health-related fitness variables are quite responsive to change.

It was due to these facts that a committee was formed from AAHPERD's Association for Research, Administration and Professional Councils and Societies (ARAPCS) to study the need for revisions in the AAHPER Youth Fitness Test. Three ARAPCS councils were represented: Measurement & Evaluation, Physical Fitness, and Research. The committee was chaired by A.S. Jackson of the University of Houston. A position paper published by this committee stated that it was imperative to separate physical fitness related to health from motor performance related to athletic ability (Plowman & Falls, 1980). Compared with motor fitness, health-related fitness is a narrower concept that usually includes only those fitness components that can prevent disease and/or promote health.

It was recommended that a new health-related physical fitness test should be developed which would:

- measure the spectrum of abilities from severely limited dysfunction to high levels of functional capacity.
- measure capacities that respond to appropriate physical training programs.
- accurately reflect an individuals physical fitness status as well as changes in functional capacity by corresponding test scores and changes in the scores.

In 1977, AAHPERD president, appointed a task force which would, following the recommendation of the Jackson committee, develop a new health-related physical fitness test. The board of Governors gave final approval of the new test in 1979 and a test manual was published soon after (AAHPERD Test Manual, 1980). The emphasis of the health-related physical fitness manual is toward achieving an optimum score that represents positive health status. The Youth Fitness Test stresses competitiveness because it measures athletic ability. Students compare scores, the highest score is the winner, the lowest score is the loser, and there is no more thought about the test on the part of the student or teacher until the next time the 'competition' might be administered.

Resistance to the new health-related physical fitness test came from the PCPFS which preferred AAHPER's Youth Fitness Test and refused to endorse the new one. The dispute is actually over the way each group defines fitness. "There has never been the slightest thought of replacing the current test with the new one", according to C. Conrad Carson, former Executive Director of the PCPFS. "The Youth Fitness Test is not used to analyze physical fitness. It is a motor performance test... to give a Presidential Award to a student because he has good flexibility is absurd..." (Hage, 1982). Russel Pate, chairman of the Committee on Implementation and Evaluation of the new test feels "the new test provides more valid and more reliable evaluation of a student's physical fitness as it relates to long-term health which should be a priority of such a test." (Hage, 1982). Pate suggests that an "acceptable option would be for AAHPERD to promote both tests; the health-related physical fitness test which would become associated with the Presidential Fitness Award program, in addition to the motor fitness test" (Hage, 1983).

The motor fitness approach to fitness is traditional and is overwhelmingly accepted. It will take time for the new health-related physical fitness test to find its place in the physical education community. There is little doubt though that even the most hard-core believers in motor fitness testing will not be able to ignore the research available which indicates that, although motor fitness tests are of great importance to athletes, health fitness is of greater importance for everyone, the average man as well as the athlete (Pate, 1983).

Starting with the 1986-87 school year, the President's Physical Fitness Award programme took on new dimensions. Based on the results of their 1985 School Fitness Study the program will include 5 test items for boys and girls and norms for ages 6-17. Changes in the test battery included:

- addition of one mile run
- addition of sit-and-reach test
- modification of sit-ups to curl-ups
- reduction in number of events from 6 to 5

Carried over from the previously used test were:

- shuttle run
- pull ups for boys and flexed-arm hang for girls

The 1986 changes were made to assess the main components of fitness for performance and health and focus on some of the physical weaknesses as revealed by the 1985 survey (PCPFS, 1986). It is clear that the PCPFS has finally 'relented' under the pressure of the new interest and concern for health-related fitness.

3.15 Kuwait: Past and Present:

Since half of this project took place in the country of Kuwait it is necessary to give the reader some information about Kuwait and its people.

The state of Kuwait is located in the north west tip of the Persian Gulf. To the north and west it shares a border with the Republic of Iraq, and to the south and south-west it borders the Kingdom of Saudi Arabia. In today's world, the level of sophistication to a which a country aspires can be measured by its commitment to scientific research and imaginative forward planning. These two factors have been fundamental in Kuwait's tremendous progress since it's independence from British protectorate in 1961. Yet in the 34 years since it's independence it has been transformed at breath-taking speed from a lifestyle based on fishing, pearl-diving and traditional desert ways of the Bedouin, into a sophisticated modern state fully conversant with all aspects of technology, urbanization, industry, architecture, commerce, financial services, education and many others. The country has undergone a radical change, in the full sense of the word, in all aspects of life. The effect the oil boom had on Kuwait is stamped on the streets, buildings and people alike. Kuwait's astounding leap to prosperity was once remarked on by Mr. Abdul-Aiziz Hussein 1960 described the rapid change as, *"...an era when the radio replaced*

the story-tellers and the car replaced the horse and the camel and nothing was left of Bedouin life except a memory..." (Kuwait Ministry of Information, 1986).

The first population census in Kuwait was conducted in 1957. Little was known about the population of Kuwait before that date although some travelers gave estimates that lacked accuracy. Kuwait's Central Statistics Office of Kuwait tentatively estimates the 1910 population at about 35,000. From 1910 to 1935 when prospecting for oil started with promising results, the rate of population growth suddenly accelerated and reached 75,000 prior to the Second World War, or rather before actual oil exports started. In the early 1950's the population was about 100,000. When the first population census was conducted in 1957 the population had doubled to 200,000.(Kuwait Ministry of Information, 1986). The more than 1,700,000 inhabitants of Kuwait today are reaping the rewards of the hard work of the people who went before. The government ensures housing, there are food subsidies for those who cannot afford groceries. The people also receive free medical care which includes routine examinations, prescriptions, surgery, and maternity care. Free public education is also available to all from kindergarten to the secondary level. University is also free but only for those who are academically qualified. These benefits come to the people through the richness of the land; the wealth from oil exporting is returned to the people of Kuwait and it is for this reason that there are no taxes.

To a large extent life is good for the people of Kuwait. However it is said, *"For every action there is a reaction equal in force and opposite in direction"*, this is very true in Kuwait. Life has gone from the calm, slow pace of a small trading port to the hustle bustle, everything in the hurried life of an international city, with all its accompanying headaches, such as pollution, traffic jams and a swelling population. Instead of the physical activity necessary to survive in a developing country we now have technology to do things for us. For example, the use of the automobile for transportation instead of walking. The number of private cars (not including taxis, buses or trucks) was 166,194 in 1974; according to figures for 1983 there were

509,904 vehicles registered, or an average of one car for every four people in the country. The growing urbanization and mechanization of modern life have made it easier for us to become physically lazy and sedentary.

Another import, which is not of total benefit, is the influence and reality of American and European food products. The urgency of providing adequate protein and calcium without identifying what is adequate and desirable has resulted in a jump in consumption of processed meats, cheeses, and eggs. In addition, the market is flooded with processed soups, vegetables, cereals, jellies and jams, and a wide variety of snack and fast foods. Diets which are made up primarily of such salty, fatty, highly processed foods such as these have been associated with heart disease in numerous studies done internationally.

There are very few studies being done in Kuwait at this time to show a link between the new Kuwaiti diet and heart disease. Lack of this information could prove hazardous to the country's health. As stated before, Kuwait is a young country. It has made momentous strides into the age of technology but we are unaware of all the implications of these advances. Unlike the UK, Kuwait does not yet benefit from various dedicated interest groups, such as the British Heart Association, the British Cancer Society, etc., that study and report on areas of specific health interest. The country is now trying to collect data to establish baselines for future research. This data will hopefully benefit researchers in their efforts to understand all the complications of our new lifestyle. Only then will we know where we stand regarding the major chronic diseases such as heart disease, cancer, stroke and the modifiable risk factors including smoking, hypertension, obesity, high fat diet and physical inactivity. Only then can targeted disease prevention and health promotion awareness and education activities be planned to impact problems.

Chapter Four
Methodology

4.0 Introduction to Methodology:

In this chapter I will describe in detail the reasons for choosing the methods used to conduct this research study. The actual methods/procedures, scope, statistical analysis, and instruments used in this study including their reliability and validity, are included in chapter five, Preliminary study and chapter six, Intervention Study. Please refer to figure 4.1 for a complete illustration of the various stages of this project. Information in this section will be presented under the following headings:

- Methodology Overview
- Authenticity of Research

As a reminder to the reader, it is the purpose of this study to explore and compare physical education lessons, physical activity levels and lifestyle behaviours of British and Kuwaiti 15 to 16 year old boys. Only boys were studied because religious norms which prohibit the interaction of adult males with unrelated females. The adolescent aged boys were chosen over any other age group because children of this age are more able to understand abstract ideas, and they are also more able to express their opinions clearly.

4.1 Methodology Overview:

Although I felt confident to take up the challenge of the Ph.D., in comparison with my colleagues who have been working in the field of educational research for many years, I possessed a lower level of personal research experience. This position of somewhere between the accomplished and accredited expert in the field and a first year bachelor student was a rather disconcerting place to be. I was apprehensive

about overlooking those aspects of educational research that the more experienced researcher included as standard information or practice. I am firmly aware of "**Why**" I'm undertaking this project, also, I know "**What**" it is that I what to study and achieve, but it is the "**How**" that is a crucially important issue.

When preparing this project I had contemplated the idea of using only the Kuwaiti student group. The single group study could certainly yield a wealth of information on its own, and it would mean a considerable saving of time and money. However, there is little or no experimentation or research within physical education programmes in Kuwait. Could I make accurate statements with only the Kuwaiti results? There are no published Kuwaiti data similar to those in this project. If I were to try and compare my data with data published in international journals, would my inferences be accurate? How would I know what I did differently? What exactly did the researcher of the other group do? Were there different variables within my study group that were not present in the published group? Without including the British subject group it would be difficult to accurately assess the Kuwaiti results. Comparison of the two groups was an essential element, adding dimension to the research results and discussion. Aside from pragmatic reasons, the choice of the UK as the contrast group was due in part to the history between the two countries. From the early 1900s to the present there have been strong political ties between Britain and Kuwait. The people of Kuwait are familiar with Britain and the British, it was hoped that this familiarity between the two nations and their people would add extra motivation for the Kuwaiti boys. They might be more willing to participate if they knew that a group of British boys thought it was worth while to participate. There is also a great deal of published information in the UK regarding physical education and health related issues. By using the UK group I could use published UK data as a means of assessment. I could then more accurately assess the Kuwaiti data. In addition, if the results indicated a need for change, the comparison with the British group might prove to be more persuasive within political circles than with a less familiar contrast group.

While comparison of the two groups is an essential element of the research it was not to be considered as the only element, rather it is but one aspect of the research method. Harlen (1994) states, "*...it is fascinating and useful to make comparisons but we cannot simply translocate aspects of one system to another.*" (p.4). All human beings are unique and although we share many similarities we are individually governed by our history, culture, social values and personal experiences. These life influences may be very different from one person to another. Within a research project in addition to the subject's individuality is the fact that the researcher can also be influenced by his or her personal experiences.

> *"... there is no clear window into the inner life of an individual. Any gaze is always filtered through the lenses of language, gender, social class, race, and ethnicity".* (Denzin & Lincoln, 1994, p.12).

The researcher realised from the outset that the project would impose upon the student's current physical education lessons. While it could cause discontent among the students it was hoped that this would be short lived and that the knowledge gained at this time could lead to future educational gain. Because a major intention of this research is to understand the individual actions, opinions, and attitudes of the participants, a control group which is necessary for many purely scientific studies, was considered to be an unwarranted imposition upon the time and energies of the proposed groups. The philosophic standpoint of this study is to encourage understanding and knowledge of the individual health benefits of physical activity within the physical education setting. The quantitative data sought are an important part of this study, but are not considered to be independent of the qualitative information. Additionally, the AAHPERD fitness tests are physically challenging. The one mile walk/run especially could prove to be very taxing for some individuals. To have the boys participate in these tests for the sake of the research seemed unjustified. There is also the matter of the time that would be needed to implement the tests. The students in the UK would have to allocate four physical education lessons to complete the aforementioned tests, the results would be of benefit only to

the researcher. That amount of time would constitute *one month* of physical education lessons for these students. Kuwaiti students would have to forego two weeks of their physical education lessons. The benefit to the students of these tests administered in a 'vacuum' would be negligible. The quantitative data without the qualitative data reveals only half of the equation in this study.

The use of qualitative research is a relatively new research method in physical education, exercise science, and sport science (Thomas & Nelson, 1990). While used for many years within education, it was not until the 1980s that there was acceptance of qualitative research methods in physical education. Physical education research has been dominated by exercise physiology research which yields quantitative results. In fact Locke's (1989) was the first essay on qualitative research in the Research Quarterly for Exercise and Sport which is published by AAHPERD.

In simple terms quantitative research is statistically/numerically oriented with relatively precise, clear cut results. Qualitative data is much more observational and results are often in shades of gray (Linn, 1986). However, this summarization of the two methods is too brief to describe accurately the depth of investigation which can be realized with qualitative research. Denzin and Lincoln (1994) are much more specific:

> *"The word **qualitative** implies an emphasis on processes and meanings that are not rigourously examined, or measured (if measured at all), in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning. In contrast, **quantitative** studies emphasize the measurement and analysis of causal relationships between variables, not processes. Inquiry is purported to be within a value-free framework."* (p.4).

Table 4.1 provides the essential elements of both quantitative and qualitative research.

Table 4.1 Essential elements of qualitative and quantitative research.

Point of comparison	Qualitative research	Quantitative research
Focus of research	Quality (nature, essence)	Quantity (how much, how many)
Philosophic roots	Phenomenology, symbolic interaction	Positivism, logical empiricism
Associated phrases	Fieldwork, ethnographic, naturalistic, grounded, subjective	Experimental, empirical, statistical
Goals of investigation	Understanding, description, discovery, hypothesis generating	Prediction, control, description, confirmation, hypothesis testing
Design characteristics	Flexible, evolving, emergent	Predetermined, structured
Setting	Natural, familiar	Unfamiliar, artificial
Sample	Small, non random, theoretical	Large, random, representative
Data collection	Researcher as primary instrument, interviews, observations	Inanimate instruments (scales, tests, surveys, questionnaires, computers)
Mode of analysis	Inductive (by researcher)	Deductive (by statistical methods)
Findings	Comprehensive, holistic, expansive	Precise, narrow, reductionist

Source: Thomas & Nelson (1990) Research Methods in Physical Activity, p.323.

There are many researchers who will generally accept only one type of research, in the field of physical fitness, quantitative research has been considered to yield optimum results. Many quantitative researchers in the field look more than slightly askance at a research method that does not yield exact empirical results. Empirical results in fields such as physics, chemistry, and biology are often seen as proof of our mastery of understanding (logically) our surroundings, and the achievements within these fields are highly valued. It is a widely sustained belief that the quantitative researcher can firmly lay hold of the absolute truth through his work (Carey, 1989). Recognition of the true value of qualitative research, which is seen as being, *"unscientific, or only exploratory, or entirely personal and full of bias"*, (Denzin & Lincoln, 1994, p.4) is resisted by purely quantitative researchers. Illustrating further the resistance that quantitative researchers seem to have toward qualitative research is the fact that in research literature quantitative researchers are described as scientists while qualitative researchers are described as journalists or soft scientists (Denzin & Lincoln, 1994).

In actuality, are qualitative researchers mere reporters? When one imagines a chemical researcher, he is in a sterile environment with instruments that measure with

uncompromising accuracy. That is the nature of his field. An inaccurate measurement could send everything (not to mention everybody) sky high; or at the very least render the entire experiment useless. It is at this point I believe lies the true divergence of method between quantitative and qualitative research, it is very simply subject matter. If, as I mentioned before, there is an inaccuracy in a chemical experiment and the reaction is not that which was anticipated, the researcher would simply pour it down the drain and begin again. Qualitative research is almost always used in humanistic studies, there are no absolutes, except for perhaps, expect the unexpected. If a subject does not react as anticipated or changes are not as distinct as the researcher had assumed they would be, we cannot dismiss the person as a failed experiment and then bring on another to try again. Qualitative researchers must root for the answer, try and understand why things happen the way they do. The uniquely human aspect of qualitative research places every aspect of the experiment into a highly complex paradigm. No two people will react exactly the same to any stimulus. There are similarities in reaction and through these a balance needs to be achieved which can suit the greater majority of people. When our friend in his laboratory reaches for a beaker of acid he will always know the properties of the contents of that beaker, they will be the same in two years and in ten years. The qualitative/ educational researcher however, must work with constant change. There is no permanence, in a years time the individual observed today could exhibit different characteristics; in ten years time there could be quite significant differences in attitude, knowledge and experience. To find one specific method of research to address issues within qualitative research is almost impossible, qualitative research is inherently multi-method in focus (Brewer & Hunter, 1989).

> *"No single method can grasp the subtle variations in ongoing human experience...qualitative researchers deploy a wide range of interconnected interpretive methods, always seeking better ways to make understandable the worlds of experience that have been studied."* (Denzin & Lincoln, 1994, p.12).

The use of two or more methods of collecting data is also referred to as triangulation. Triangulation in the social sciences uses several different approaches to acquire data. In so doing exclusive reliance on one set of data is eliminated. If the data from various measures yield similar results the validity of the study is enhanced (Lin, 1976).

These multiple methodologies of qualitative research represent what Nelson, Treichler and Grossberg (1992, p.2), Levi-Strauss (1966, p.17), and Weinstein and Weinstein (1991, p.161) term a ***'bricolage'***, the qualitative researcher being a ***'bricoleur'***. Becker (1989) indicates that the qualitative researcher as a bricoleur privileges no one method over another. All tools, methods, strategies or empirical materials that are available and suit the task will be used. If new tools are needed they will be invented or pieced together from existing models. This type of methodology, which combines various tools and strategies to understand a subject, adds, rigour, breadth, and depth to an investigation (Flick, 1992).

This research was initiated with a preliminary study. The preliminary study was used to gather baseline information about British and Kuwaiti 15 to 16 year old boys physical fitness levels and attitudes toward physical activity. Please refer to figure 4.1 which illustrates the various stages of this research. A lifestyle questionnaire was the first instrument of the project to be developed. It was derived from previously tested instruments and the reliability and validity were tested in the UK and Kuwait. Complete information regarding the methods, reliability and validity of this instrument can be found in chapter five, Preliminary Study, sections 5.8 and 5.11. The second test instrument used was the American Alliance of Health Physical Education Recreation and Dance (AAHPERD) Health-related physical fitness test battery was used without alteration. The AAHPERD fitness test battery was appropriate for the project and the validity and reliability of the test is well established and accepted by physical education specialists internationally. Complete information regarding this test can be found in section 5.12, chapter 5, Preliminary Study.

Schools in the County of Avon were contacted by mail and requested to participate in this preliminary study. Of the schools contacted six indicated they would be available during the proposed time schedule. In Kuwait five schools agreed to participate in the preliminary study. Results from this preliminary study were later used to design a health-related physical education programme that would help students understand more about physical activity and health. This curriculum was designed using a variety of health-related curricula models, and other information found in the current literature. This health-related programme was the focus of the intervention study. In addition to the curriculum, an attitude scale and knowledge test were designed to assess change within the subject group. The structure of the intervention study is illustrated in figure 4.1. The intervention study was initiated with a pre-test administration of four test instruments, these were; lifestyle questionnaire, attitude scale, knowledge test, and health-related physical fitness tests. For complete information about the development, validity, and reliability of these intervention study test instruments please refer to sections 5.8, 6.1, 6.3 and 5.12 respectively. One class of 15 to 16 year old boys from one school in the UK and one class of 15 to 16 year old boys from one school in Kuwait participated in the intervention study. The research was initiated with pre-test administration of the four test instruments. The pre-test was used to help students understand the focus of the curriculum, and to help set individual health related fitness goals. Throughout the implementation of the curriculum the researcher kept a research diary, included were observations, impressions, and conversations, which arose during this stage of the research. At the conclusion of the health-related curriculum, the researcher undertook the post-test administration the four research instruments, the questionnaire, attitude scale, knowledge test, and the health-related fitness tests. The researcher's observations of the two groups were kept in a research diary. At the conclusion of the health-related physical education programme, and post-test administration of the test instruments, taped individual interviews with the students and teachers were conducted.

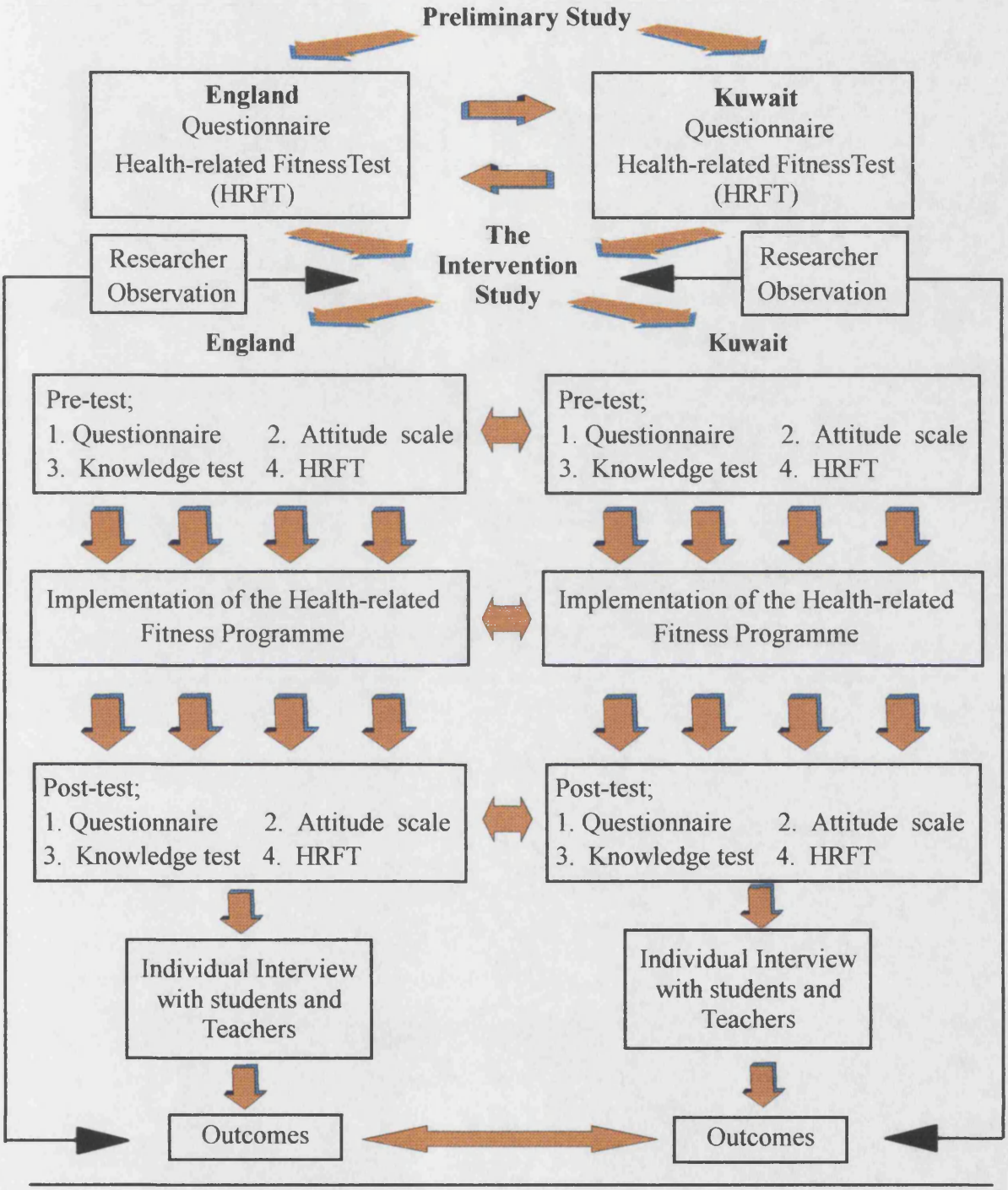


Figure 4.1 The different stages of the research

All of the information gained from the stages of the intervention study were then compiled to yield outcomes of the intervention study. These conclusions and recommendations can be found in chapter seven.

4.2 Authenticity of Research:

Wynne Harlen (1994a), Scottish council for Research in Education, when addressing the British Educational Research Association (BERA) about the core values, qualities and activities which constitute quality educational research stated that:

"High quality research should:

1. *Conform to 'the rules' (i.e. originality; investigative or scholarly study; the intention to add to knowledge and understanding; and relevance to education).*
2. *Make clear its standpoint in relation to the nature of knowledge.*
3. *Show consistency, within the context of its philosophic standpoint, in the choice of methods, the nature of data and the manner in which data are analysed, interpreted and reported.*
4. *Address and advance existing knowledge and theory.*
5. *Be carried out with systemic rigour and in accordance with ethical principles.*
6. *Help the understanding of those involved in any way in education; providing them with information and relevant viewpoints.*
7. *Communicate effectively with potential audiences or users of the research findings (p. 2)."*

Before being able to proceed it is necessary to address the issues raised by Harlen. Does this project possess the attributes of quality research? I sincerely believe that it does. While there is great interest and active research being done in this field, especially in the UK and America, there is no research of this type being done in Kuwait at all. It simply is not recognised as a valuable contributor to the

student's 'real' education (Behbehani, 1992). I believe that through this research it will possible to open many avenues of inquiry about physical education and physical activity in Kuwait. Information gathered in this project should also prove to be valuable to the British physical education teacher. Currently there is very little cross-cultural research being done between England and Arab/Muslim nations. There is an expanding population of Muslim people from a variety of countries residing in Britain today, and it will be of benefit to physical educators to have information about their Muslim students cultural interpretations of physical activity.

I have undertaken this research to assess ways in which physical educators can help student's within physical education lessons gain as much as possible from those lessons. Students opinions and attitudes about physical activity are of the utmost concern. I am aware that at times the participants in research can often lose their personality in a project and they become simply a 'subject' at the researcher disposal. I believe that subjects in a research project are in actuality assistants to the researcher and must be afforded the respect they deserve. It was partly for this reason that the researcher felt control groups would not contribute positively to this study. I was interested in the student's reactions to the programme and their opinions of physical activity and physical education and did not need a control group for this purpose. While test instruments will yield empirical results, these will not be the end of the research process. It is imperative to decipher why the students act the way they do and learn how we can assist their development through physical activity.

I believe that the various test instruments developed for this project will add to its rigour. The instruments have been designed to give overlapping information. The information from one test will corroborate or refute findings of another. In this manner the conclusions drawn from the research will be more reliable. All tests were voluntary and no student was expected to participate against his wishes.

Concerning, 'Helping the understanding of those involved in education and communicating with potential audiences...', I believe that this dissertation is the first step in that direction. Different aspects of the results of the preliminary study have

been presented at The Kuwaiti Scientific Research Conference in London, as well as at the AAHPERD National Convention in America. It is also my intention to prepare articles for publication in the UK. As stated previously I believe that the information gained through this work will give British teachers insight into the value Muslim culture places on physical activity. It may assist the teachers understanding of some of their students, as well as give insights into possible problem areas.

Additionally it is my intention to make use of the results of this project as an impetus for change in the physical education curriculum in Kuwait. Teacher preparation courses are another area which may need to be scrutinised and amended.

I believe that this project meets Harlen's requirements for quality research. Discussion of results obtained through this study will open many areas of further study in Kuwait and cross-culturally in the UK. It definitely and positively addresses issues of concern for today and tomorrow.

Chapter Five
The Preliminary Study

5.0 Preliminary Study: Introduction

The purpose of this stage of the research was to explore and compare lifestyle behaviours and physical activity levels of British and Kuwaiti 15-16 year old boys. The similarities and differences of the two groups' physical education lessons and health-related physical fitness levels were also of great concern to the researcher and were closely examined. This chapter is presented in two parts. Part (I) will provide the reader with a detailed description of the methods used to conduct the preliminary study. In Part (II) the results and discussions of data obtained through the implementation of the instruments described in Part (I) will be examined in detail. At the end of Part (II) a summary of the key findings of the preliminary study are presented.

Part (I) Methods of the Preliminary Study

5.1 Scope of the Preliminary Study:

Participants for this part of the study were selected using cluster sampling method of selection.

> *"Cluster sampling is sampling in which groups, not individuals, are randomly selected. All the members of selected groups have similar characteristics . . . Cluster sampling is more convenient when the population is very large or spread out over a wide geographic area."* (Gay, 1981, p.93).

Frankel and Wallen (1993) stipulate that:

> *"The advantages of cluster sampling are that it can be used when it is difficult or impossible to select a random sample of individuals, it is often far easier to implement in schools, and it is frequently less time consuming" (p.85).*

In England the subjects for the preliminary study were chosen from schools within the six districts of the Avon County School District. These include: Bath, Bristol, Kingswood, Northavon, Wansdyke, and Woodspring. One entire class of year ten students from each school was asked to participate in the preliminary study which consisted of a questionnaire and health-related fitness tests. The total number of British students was (n = 173). The participation rate for the questionnaires was 65% (n = 112); 99% (n = 171) of the subjects participated in the health-related fitness test.

In Kuwait the subjects were chosen from schools within the five school districts. These are: Al-A'seama, Hawally, Al-Ahmady, Al-Jahra, and Al-Farwania. One secondary school from each of these districts was chosen to participate in the preliminary study. The total number of Kuwaiti students was (n = 147). The participation rate for the questionnaires was 90% (n = 133); 73% (n = 107) of the Kuwaiti subjects participated in the health-related fitness test.

5.2 Research Ethics and Consent Forms:

The cost/benefits ratio of this project was examined before there was any contact between the researcher and a subject group. What would be the benefit to the students that participated? Would there be undue stress caused if the subjects took part? Could they be physically injured? Could the proposed research add to the students understanding and appreciation of the subject? Was it possible that the proposed project could lead to a new understanding within the field of physical education? Would we be adding to the existing body of knowledge within the field of physical education, which could be of benefit to others in the future? What is the possible contribution of this project to those immediately concerned? There are always ethical questions which must be addressed when contemplating a research project (Frankfort-Nachmias & Nachmias, 1992). The subjects in this project were not singled out for any untoward reason, or for any unusual personal characteristic.

We did not choose physically active groups of boys to compare against physically inactive boys. The boys were simply enrolled in a physical education class at a school which was willing to dedicate the time to participate in the study. There was no pressure to perform and anonymity was maintained throughout the written work. The students were not subjected to any overly demanding physical tests, and were always allowed to withdraw from any aspect of the research.

> *"The principle of informed consent arises from the subject's right to freedom and self-determination. ...when restrictions or limitations are placed on that freedom they must be justified and consented to, even in research proceedings."*(Cohen & Manion, 1994, p.350).

Participants must be informed of the project background and objectives; procedures and purposes; all relevant queries must be answered; and the participants must be informed that they may withdraw or refuse to take part at any time (BJPE, suppl., 1991).

> *"Any subject involved in an 'experiment' who may be exposed to possible physical, psychological or social injury must give informed consent prior to participating in a project."* (BJPE, suppl., 1991, p. 16).

A consent form conforming to the above standards was prepared and read aloud to the students by their regular physical education teacher. It was at this time that all questions were answered by the researcher and the physical education teacher. The students were also given a parental consent form, granting parental permission for the students participation. Both forms were collected from the students by the researcher prior to the beginning of the preliminary study. For complete consent forms refer to appendix **A**.

5.3 Procedures of the Preliminary Study:

All procedures of the preliminary study were undertaken in the regular physical education setting. The preliminary study was conducted in Kuwait from the first of February to the end of March 1992. This time period coincides with the Spring season in Kuwait, which is from the 16th of February to the 20th of May (Kuwait Ministry of Planning, 1992). By conducting the project during these months the difference in temperature between the two countries, which can be extreme, was minimized. The cooler Spring temperatures would be safer for outdoor physical activity and could encourage the students to take part in the project. Table 5.1 shows the average temperature for the months of February and March 1992.

Table 5.1 The average temperature in Kuwait during February and March 1992.

	Mean	Maximum	Minimum
February	13.6	18.7	8.7
March	16.4	21.7	11.6

Annual Statistical Abstract 29th ed. Ministry of Planning, 1992 Kuwait.

Permission to undertake a research project in Kuwaiti public schools was requested of, and granted by the Kuwaiti Education Authority, refer to appendix **B**. Five secondary schools, one school from each of the five Kuwaiti school districts, agreed to participate in the study. The schools were: Ahmad Beasher AL-Roomy, Salah Al-Deen, Sead Ben Amomare, Abin Al-Amead, and Al-Jahra.

In England six schools agreed to participate in the preliminary study these were: Kingsfield, Speedwell, Saint Gregory, King Edmunds, St. Bernadettes, and Churchill. The preliminary study was conducted from April 1992 through July 1992.

Student and parent consent forms were distributed to each class in every school participating in the study one week prior to the start of testing. The researcher made it clear to every student that he was available to answer any inquiry from either the student or their parent, by phone or in person. The two consent forms were collected from the students by the researcher prior to the beginning of the field work.

5.4 Setting of the Preliminary Study:

In the UK and Kuwait the administration of the questionnaire took place in the regular physical education location. This made it easier to have a high rate of response 65% (n = 112) in England and 90% (n = 133) in Kuwait. The familiar surroundings were used so that the students would feel more comfortable and thereby encourage thoughtful response to the questionnaire. The students had one hour in England, and 45 minutes in Kuwait to fill out the questionnaire. There was sufficient time for the students to record and finish the questionnaire before the end of the lesson.

The administration of the AAHPERD Health-related Fitness Tests took place during the physical education lesson time period. Two lesson periods were needed to finish the testing in Kuwait, and one lesson period was needed in the UK. The difference in the amount of time needed to complete the test battery was due to the fact that physical education in Kuwait was scheduled for 45 minutes and in the UK the lesson was scheduled for 60-90 minutes, depending on which week the test took place. Each student was given a pre-printed sheet to record his results. Before the performance tests were undertaken, descriptive measures (age; weight in Kg; height in cm; skinfold thickness in mm) were compiled one student at a time, by the researcher. A Lange skinfold caliper was used to measure skinfold thickness. All skinfold measures followed the recommended protocol described in the AAHPERD Test Manual (1980). The median of three consecutive skinfold measures was used as the criterion score. The performance tests were administered by the researcher with the aid of the regular PE instructor.

The sit-up and sit and reach tests were administered in the gymnasium according to the AAHPERD Test Manual (1980). The sit and reach measurement apparatus was constructed according to the AAHPERD Test Manual (1980).

In both the UK and Kuwait the site of the distance run was a 400 meter lap marked off on the soccer field adjacent to the schools. The researcher divided the test groups into pairs so that the students could record each others results and also

encourage each other to participate fully. Each student was instructed on how to record the results of each test. Before each testing session the students warmed up under supervision. The warm-up involved the major muscle groups to be used, it consisted of five minutes of slow paced jogging and five minutes of calisthenics. For the one mile walk/run the researcher needed to be sure the students understood what pacing meant and that this component of the test was not a race. Students were instructed that they should be able to speak to each other while running in the first two laps, after that they should exert themselves further but not to run with full effort until the last lap.

5.5 Statistical Analysis of the Preliminary Study:

Descriptive statistics, have been used to express the findings of the preliminary study. Mean, median, first quartile, third quartile, standard deviation, percentile ranking, frequencies, and graphical representations of the distributions of the various test scores were calculated. The t-test was used to assess the possible differences between the British and Kuwaiti boys health-related physical fitness test scores and the published American norms for the same tests. The significant difference between the groups was tested at the level of ($p \leq 0.05$). Witte (1989) writes that, *"Unless there are obvious reasons for selecting either a larger or a smaller level of significance, use the customary .05 level"* (p.209).

5.6 Limitations of the Preliminary Study:

The researcher recognises several limitations to this study. Factors relating to performance are as complex as the individual (Cureton, 1982). Prior physical condition, strength, skill, motivation and cultural influences as well as biological factors, all relate to performance. Prior physical condition will have no bearing on the student's participation in the project. There was also no control for prior

exposure to the tests to be performed. The attitudes of the students toward the fitness testing, were not investigated. The limitation of determining body fatness by skinfolds must also be noted. Hydrostatic or underwater weighing is considered the most accurate means of measuring body composition. However this is a very precise laboratory test and for practical reasons could not be used in this study. Student's body fat can only be estimated using skinfold measures (Lohman, 1982; Lohman, Boileau & Massey, 1975). The students who were tested have not attained full growth. Density of lean tissue is in a state of continual change in adolescence, therefore the absolute amount of body fat cannot be determined with certainty (AAHPERD Test Manual, 1980). Lohman (1982) and Lohman (1975) state that body fatness results indicated by skinfolds needs to be viewed with caution .

The test results will be for boys only which may not reflect the true fitness for the entire youth population of Britain and Kuwait. This limitation is due to cultural and religious norms which consider contact between an adult male and an unrelated young female inappropriate behavior. In order to test the female population the researcher would have had to recruit and instruct adult female physical education teachers on how to administer the tests as well as how to determine skinfold thickness. Due to time considerations this was not a feasible undertaking.

The fact that not all students participated in all test components is also an important limiting factor. Specifically, on the walk/run component of the health-related fitness test battery. Only 85 of the 107 Kuwaiti boys who agreed to participate in the physical tests would participate in this test component. Test results would be affected and then outcomes and discussion would be affected.

5.7 Instruments of the Preliminary Study:

Two types of instruments were used in order to gain some insights and understanding of the attitudes toward physical education and physical activity, as well as the health-related fitness of the two populations.

- A questionnaire to investigate lifestyle, physical activity, and physical education.
- The American Alliance of Health Physical Education Recreation and Dance (AAHPERD) Health-related Fitness Test.

5.8 Preliminary Study: Questionnaire

The questionnaire was developed at the University of Bath, UK. It was divided into three sections; physical education lesson, lifestyle and health habits, and physical activity. The content validity, and reliability coefficient of the questionnaire were established, see section 5.10 and section 5.11 respectively.

Researchers often use the questionnaire as an instrument in educational research to gain information about those areas of the students behaviour that the researcher would be unable to observe personally.

Thomas and Nelson (1990) indicate that all research work should be piloted. In the case of questionnaires they advise two pilot studies. In the first pilot study the researcher asks colleagues to critique format, content, expression, and importance of items. A sample of respondents similar to the intended population are asked to participate in the second pilot study. The resulting data is analyzed to see if the items are measuring what they are meant to measure; if the items are clear and appropriate.

The final draft of the questionnaire was administered personally by the researcher, Best (1981) advises that, if possible, it is to the researcher's advantage to be present when a questionnaire is administered:

> *"The person administering the tool has an opportunity to establish rapport, to explain the purpose of the study, and to explain the meaning of items that may not be clear. The availability of a number of respondents in one place makes possible an economy of time and expense and also provides a high proportion of usable responses." (p.167).*

The questionnaire was administered to six schools within the Avon County School District, UK. It was also administered at five different schools in Kuwait, one school from each district. The results of the two groups were calculated and contrasted with each other, refer to part two of this chapter, section 5.15.

5.9 Preliminary Study: The Development of the Lifestyle, Physical Activity, and Physical Education Questionnaire:

> *"The quality of the instruments used in research is very important, for the conclusions researchers draw are based on the information they obtain from these instruments."*(Fraenkel & Wallen, 1993, p.138).

In order to assess students lifestyle, physical activity patterns, and opinions of physical education a questionnaire was developed and revised using the National Children and Youth Fitness Study I and II, NCYFS I and NCYFS II (AAHPERD, 1987). Additional insight was sought from various other education and physical education specialists, in the United Kingdom and in Kuwait, as well as the researchers own experience and insight gained from the available literature on this subject. The questionnaire was designed to look into three main areas; physical education lessons, lifestyle & health habits, and physical activity patterns of the students. The initial questionnaire consisted of 49 items in total. Nineteen items dealt with the physical education lesson divided into two areas of interest; seven questions examined physical education lesson in school, and 12 items examined the students attitude toward physical education lessons. Lifestyle and health habits were examined in 19 statements. Five items addressed sedentary activity, substance abuse also consisted of five items. Weight concerns four items, safety habits two items, sleep hours two items, and having breakfast one item. Physical activity was explored in 11 items.

5.10 Preliminary Study: Validity of the Questionnaire

The simplest definition of validity of an instrument is referred to as *"The degree to which a test measures what it is supposed to measure."* (Gay, 1981, p.110). However, this definition can be further expanded as was done by Fraenkel and Wallen (1993) who define validity as, " *Appropriateness, meaningfulness, and usefulness of the specific inferences researchers make based on the data they collect."* (p.139). This definition says that a test instrument can be valid but still be invalid in the research that it was applied. A researcher may devise, test and re-test an instrument and find it valid in content, but apply it inappropriately. If we wanted to assess a persons knowledge about automobile engines and devised a valid test about motoring laws, administered it, and then inferred from the results that the subjects had no knowledge about automobile engines, our inferences would be incorrect, for although it was a valid test we weren't testing the subjects knowledge of automobile engines we were testing their knowledge of motoring laws.

> *" The question is not " valid or invalid" but rather valid for what and for whom? . . . It is the " valid for whom" concern that makes the description of the norm group so important. Only to the degree that persons in the norm group are like the persons to whom we wish to administer the test can proper interpretation of results be made."* (Gay, 1981, p.110).

There is an inherent problem with proving the validity of an instrument, it is impossible to measure it in real numbers or mathematical equations, there is no simple sole measure as statistical evidence, it is supported solely on consensus of professional opinions (Henerson, Morris, and Fitz-Gibbon, 1987). There are many types of validity, each is designed for specific purposes, for the purposes of this study the researcher was able to establish content validity of the instrument with the help of experts. Other aspects relative to the environmental conditions were considered throughout the project in an effort to maintain a similar atmosphere and level of participation. Content validity is a necessary consideration in the design of instruments for

educational research but is not sufficient, in itself, to guarantee valid outcomes. Content validity refers to:

> *"The degree to which the sample of items, tasks, or questions on a test are representative of some defined universe or domain of content."* (American Psychological Association, 1985, p.10).

The content of a test is valid if it adequately samples what was covered throughout the course (Thomas & Nelson, 1990). In addition to content validity is item validity and sampling validity.

> *"Item validity is concerned with whether the test items represent measurement in the intended content area, and sampling validity is concerned with how well the test samples the total content area."*(Gay, 1981, p.111).

Table 5.2 shows the number of items in each area in the lifestyle and physical activity patterns questionnaire.

Table 5.2 The number of items in each area in the lifestyle and physical activity atterns questionnaire.

PE Lesson 19 Items	**Lifestyle & Health Habits 19 Items**	**Physical Activity 11 Items**
1 , 2 , 3 , 4 , 5 , 6a , 6b , 35 , 36 , 37, 38 , 39 , 40 , 41 , 42, 43 , 44 , 45 , 46.	12 , 13 , 14 , 15 , 16 , 17 , 18 , 19 , 20 , 21 , 22 , 23 , 24 , 25 , 26 , 26* , 27 , 31 , 34.	7 , 8 , 8* , 9 , 10 , 11 , 28 , 29 , 30 , 32 33.

After defining the research problem and identifying the purpose of the research, the questionnaire was designed. Content validity was obtained through expert judgment (Fraenkel & Wallen, 1993; Gay, 1981; Safrit & Wood, 1989). To assess the content validity the researcher contacted several experts specializing in the area of Education, and Physical Education and Health. In the UK experts at the Bristol Art and Physical Education Faculty, Education Development Centre were contacted. Physical Education specialist teachers at several Avon county Secondary Schools also gave their advice and opinions on the instrument. Physical education/education

instructors in the physical education department, School of Education at the University of Bristol, and the University of Bath were consulted. In Kuwait instructors in the Physical Education Department at the College of Basic Education, and lecturers from the Department of Physical Education, School of Education, at Kuwait University were willing to critique the questionnaire. In addition to the college and university level physical education instructors, specialized physical education teachers working within the Kuwaiti secondary school system were contacted for opinions and advice.

The instructors were asked to give their professional judgment on the content validity of the questionnaire. The questionnaire was then translated into Arabic by the researcher. The translation was given to Arabic speaking colleagues to check on the quality and clarity of the translation. The final revision of the questionnaire was reviewed by an Arabic linguistic instructor at the College of Basic Education in Kuwait.

In accordance with Thomas and Nelson (1990) who suggest that from their entire book, Research Methods in Physical Activity, there was not one item of advice more fundamentally important than, *"to pilot all procedures."* (p.79). Without fail what appears to be clear and simple before administration could actually be quite problematic during the project. A pilot study can highlight weakness and allow the researcher to modify his instrument thereby enhancing the final project. For these reasons a pilot study was administered in the UK to one year 10 class at one secondary school, and in Kuwait to one first level secondary school class. The pilot study was undertaken to highlight deficiencies of the instrument, as well as get suggestions for improvement. The time needed to finish the questionnaire was also measured. The subjects taking part in the pilot study were encouraged to make comments and suggestions concerning directions, recording procedures, and any ambiguities. For the Kuwaiti subjects in addition to the above concerns, was the matter of the translation of the instrument accurately from English into Arabic. The process of translation could have an effect on meaning and interpretation of the questions, thereby

influencing results. The Kuwaiti subjects in the pilot study were asked to give their opinion of the clarity of the instruction and the language used.

After the pilot study, the suggestions received from the students, in addition to the comments made by the experts, were incorporated into the questionnaire format and it was then ready to be tested for the reliability coefficient.

5.11 Preliminary Study: Reliability of the Questionnaire:

According to Oxford Encyclopedic English Dictionary, ***reliability*** means, *"of sound and consistent character or quality."* (p.1220). In regard to research measurements the term means essentially the same thing. In Frith & Macintosh (1984), reliability of an instrument is defined by Deale (1975) as:

> *"consistency, meaning how far the test would give the same results if it could be done again by the same children under the same conditions."* (p.21).

Gay (1981) refers to reliability as, *"the degree to which a test consistently measures whatever it measures."* (p.435). Reliability, therefore is the consistency of an instrument to produce the same results over time. The reliability coefficient is expressed numerically from 0.00 to 1.00. The closer the coefficient is to 1.00 indicates a high reliability coefficient of an instrument, and the more accurate the representation of the true score of the subjects on that instrument (Thomas & Nelson, 1990).

There are many ways to assess the reliability coefficient, of an instrument. The most widely known and used are the test-retest method; the equivalent forms method; and the internal consistency method (Fraenkel & Wallen, 1993).

> *"Test-retest method involves administering the same test twice to the same group after a certain time interval has elapsed. A reliability coefficient is then calculated to indicate the relationship between the two sets of scores obtained."* (Fraenkel & Wallen, 1993, p.147).

"Equivalent forms of a test are two tests that are identical in every way except for the actual items included. The two forms measure the same variables, have the same number of items, the same structure, the same difficulty level, and the same directions the same group takes both tests, the average score as well as the degree of score variability should be essentially the same on both tests." (Gay, 1981, p.118).

Internal consistency methods of calculating reliability of an instrument require only one administration of the instrument. This type of method is used in the split-half procedure; scoring two halves of a test separately for each person. The Kuder-Richarson Approaches; and the Alpha Coefficient.

"Another check on the internal consistency of an instrument is to calculate an ***alpha coefficient*** *(frequently called* ***Cronbach alpha*** *after the man who developed it). This coefficient (a) is a general form of the KR20 formula to be used in calculating the reliability of items that are not scored right versus wrong." (Fraenkel & Wallen, 1993, p. 149).*

For the purpose of this study test-retest method was used to establish the reliability of the questionnaire used. The questionnaire was administered to the same subjects twice with an interval of two weeks. Henerson, et al. (1987) indicate that,

"Reliability coefficient of 0 .70 or above are usually considered respectable, regardless of the type of reliability calculated or the method of calculation used, and coefficients of 0.90 and above are not unusual for standardized achievements tests. In the case of attitude measurements, while reliability coefficients of above 0.70 are certainly desirable, lower coefficients are sometimes tolerated." (p.154).

Similarly Witte (1989) advises that,

"An r. value of 0.50 or more, in either the positive or the negative direction, is typical of important relationships observed in most areas of behavioural and education research." (p.123).

The test-retest reliability coefficients of the British and Kuwaiti boys for the lifestyle, physical activity, and physical education, sections and subsection are presented in table 5.3.

Table 5.3 The reliability coefficient of the lifestyle, physical activity, and physical education questionnaire.

Different areas of the questionnaire	British	Kuwaiti
Attitude toward PE lesson	.77	.60
PE lesson information	.55	.96
Total PE lesson score	.77	.85
Lifestyle	.80	.69
Physical activity	.98	.65
Total questionnaire score	.79	.61

The final form of the questionnaire used in the preliminary study is presented in appendix **C**.

5.12 AAHPERD Health-related Fitness Test:

The health-related fitness assessment consisted of the fitness tests outlined in the AAHPERD Test Manual (1980). The test battery included a one mile walk/run; a sit and reach flexibility test; timed sit-ups; sum of skinfold measurements; and height and weight measurements.

1. One mile walk or run: The group was divided into pairs. One half of the group performed the test, while the other half of the group wrote down their time as called by the researcher. The time necessary for each student to complete the task is recorded in minutes and seconds. This test gives an indication of the student's cardiovascular fitness. The test requires a flat area 400 meter track or any other measured surface, indoors or out, with 100 meter straightway, a stopwatch is also needed.

2. Sit and reach: This test apparatus consists of a specially constructed box as described in the AAHPERD Test Manual (1980). The students sit on the floor with their legs extended. The heels of the feet are at 23cm; beyond the heel, numbers in centimetres increased; before the heel the numbers decreased. This test measures flexibility of the low back and posterior thigh.

3. Timed sit-up: The students work in pairs recording the number of completed flexed knee sit-ups in a one minute period. The criterion for a completed sit-up is one in which the student keeps his arm folded over and in contact with his chest and touches his forearm to his thigh. This indicates abdominal strength and muscular endurance. Equipment needed is a mat or other comfortable surface and a stop watch.

4. Skinfold measurements: Students stand passively while the researcher records subscapular and triceps skinfold measurements using a skinfold caliper. This test is used to determine percentage of body fat. Characteristics of acceptable skinfold calipers include an accurate calibration capability and a constant pressure of 10gm/mm throughout the range of skinfold thickness.

5. Age; weight in Kg; and height in cm were recorded.

5.13 Reliability and Validity of the AAHPERD Fitness Tests:

The reliability and validity of the AAHPERD health-related fitness test are considered excellent (AAHPERD Test Manual, 1980). The degree of reliability of a test is the probability that repetitions of the test will give similar results under similar conditions. Validity is the degree to which a test measures that which it is supposed to measure. A test may be reliable and yet not valid (Johnson & Nelson, 1969). The sit-ups, sit and reach, and skinfold fat tests have been validated against other similar tests (AAHPERD Test Manual, 1980).

The distance run is a valid field test of cardio-respiratory function and performance because it is related to maximal oxygen intake (VO2 max) and most exercise physiologist agree that (VO2 max) is a good overall measure of cardio-respiratory capacity (Buskirk & Taylor, 1957). However, the biological determinants of distance running performance are complex. Genetic cardio-respiratory capacity, body fatness, anaerobic threshold, running skill, maturity, age, motivation and others have significant independent effects (Cureton, 1982).

The sit and reach test has been validated against other flexibility tests and the coefficients have generally ranged between 0.80 and 0.90. An individual must have good extendibility in the low back, hip, and posterior thigh to score high on this item. Reliability has been ranging higher than 0.70 (AAHPERD Manual, 1980).

Estimates for the validity of the modified sit-up test has been evidenced through studies of muscle activity during execution of the sit-up which show that abdominal muscles are being utilized during performance of the task. The test-retest reliability coefficients have ranged from 0.68 to 0.94 (AAHPERD Test Manual, 1980). Based on these values the validity and reliability of this item can be considered acceptable (Klesius, 1968).

Degree of body fatness has been measured most accurately through hydrostatic weighing measures. Validity coefficients between skinfold and hydrostatically determined body fatness have consistently ranged from 0.70 to 0.90 in both adults and children. The test-retest reliability of skinfold fat measures has exceeded .95 in experienced testers (AAHPERD Test Manual, 1980).

Chapter Five - Part II

Preliminary Study Test Results & Interpretation

5.14 Introduction to Part II of the Preliminary Study:

It is the intention of this section of the chapter to present, analyse, and discuss the results of the British and Kuwaiti 15-16 year old boys on the test components of the preliminary study which was comprised of the following:

- Health and Physical Activity Questionnaire
- Health-related Fitness Tests

The Preliminary study was undertaken to gather baseline information about British and Kuwaiti 15-16 year old boys physical activity and health-related fitness levels and their attitudes toward physical education and physical activity. Not all students agreed to participate in either the health-related fitness tests or the questionnaire. The student's reason for non-participation were not explored.

In the UK the subjects were chosen from schools within the six districts of the Avon County School District. One entire class of year ten boys from each school was asked to participate. The total number of British students was (n=173). The participation rate on the questionnaire was 65% (n=112); 99% (n= 171) participated in the health-related fitness test.

In Kuwait the subjects were chosen from schools within the five school districts. One secondary school from each of these districts was chosen to participate in the preliminary study. The total number of Kuwaiti students was (n= 147). The participation rate for the questionnaires was 90% (n= 133); 73% (n=107) of the Kuwaiti boys participated in the health-related fitness tests.

5.15 Preliminary Study: Results of the Questionnaire

In the UK and Kuwait the implementation of the questionnaire took place in the regular physical education location, in this manner time was used most efficiently. This made it easier to have a high rate of response; 65% (n=112) in the UK and 90% (n=133) in Kuwait. The familiar surroundings were used so that the students would feel more comfortable and thereby encourage thoughtful response to the questionnaire (Best, 1981). The value and reasoning behind the research project were explained to the students and they were assured of complete confidentiality, it was hoped the students understanding of these two points would assure greater honesty when answering the questionnaire (Balding, 1989).

5.15.1 Physical Education Lessons:

All of the British students had physical education at least once a week with 53% having physical education lessons twice per week. Lesson time averaged from 50-85 minutes. Kuwaiti students had physical education once a week during the 1991/1992 school year with all lessons scheduled for 45 minutes. Table 5.4 represents how much actual physical activity time within the physical education lesson students reported.

Table 5.4 Preliminary Study: Students perceptions of activity time in one PE lesson.

Activity Time	British n = 112	Kuwaiti n = 133
Less than 15 min.	None	8% (n = 10)
16 - 30 min.	10% (n = 11)	53% (n = 70)
31 - 45 min.	35% (n = 39)	31% (n = 41)
46 - 60 min.	28% (n = 31)	None
61 min. and more	22% (n = 25)	None

All participating schools in Britain and Kuwait had showering facilities, however students felt that there was not enough time allowed to shower and change.

5.15.2 Physical Activity Levels Outside the Physical Education Setting:

When the students were asked if they were involved in any sports within the school but outside the physical education class, as well as any other physical activity outside the school, results for the British boys were high, however, the Kuwaiti results were not encouraging. Table 5.5 represents the rates of participation in activity outside the physical education class.

Table 5.5 Preliminary Study: Student activity outside the PE lesson.

	In School other than PE lesson	**Outside the School setting**
British n = 112	**79% (n = 88)**	**85% (n = 95)**
Kuwaiti n = 133	**42% (n = 56)**	**58% (n = 77)**

The British results indicated relatively higher levels of participation in physical activity; only 21% (n = 24) were not involved in any physical activity other than physical education in school, and only 15% (n = 17) did not participate in physical activity outside the school setting. More than half of the Kuwaiti subjects were not involved in any physical activity in school other than physical education lessons.

5.15.3 Type of Physical Activity Most Often Engaged In:

When asked about the type of physical activity they most often were engaged in, both in and outside of school, results were very biased toward team activities. Individual activities were not engaged in by a high percentage of boys. Table 5.6

indicates the type of physical activity, i.e., TEAM or INDIVIDUAL, the students were most often involved with during the 1991/1992 school year.

Table 5.6 Preliminary Study: Percentage of those students choosing to do extracurricular sport.

Type	Team Sport Only	Team Sport & Individual	Individual Sport Only
British n = 96	**50% (n = 48)**	**21% (n = 20)**	**29% (n = 28)**
Kuwaiti n = 77	**65% (n = 50)**	**29% (n = 22)**	**6% (n = 5)**

Of those participating only 29% (n = 28) of the British and 6% (n = 5) of the Kuwaiti subjects were involved in individual sports only. According to published research, subjects who are involved with individual sports, or both individual and team sports will be more likely to continue to be physically active into adulthood. These individuals most often do not need team spirit to carry out their activity, they are self-motivated.

5.15.4 Reasons for Non-Participation in Physical Activities:

The students who indicated they did not participate in physical activity outside of physical education were asked to identify all their reasons for non-participation. Table 5.7 lists responses given by the inactive students for non-participation, ranked from 1 to 10.

Table 5.7 Preliminary Study: Reasons for non-participation in physical activity as indicated by inactive students.

Reasons	British n = 16	Kuwaiti n = 56
Always picked last in selection of the team and sit out most of the game.	3	1
My friends do not play sport.	4	2
Because of my studying (school work).	5	3
I do not like to compete with others.	4	3
My parents do not allow me to join sports teams.	0	5
I am not very good at any particular sport.	1	6
Because of illness.	0	7
I do not like the activity leader (teacher, coach, etc.).	2	8
I do not like sports and physical activity in general.	4	9
There is not enough time for physical activity.	4	0

The British boys' reasons for non-participation seemed to stem from the boys personal decision that physical activity was unimportant. They seemed to have a low self-esteem concerning physical activity and physical education; this could be related to the students' perception of his physical appearance, or perhaps his skill level. The solution to this problem may lay in changing the subjects' attitude towards physical activity and physical education. A physical education programme that would allow the subject to be involved in, and be successful at executing a task which emphasizes participation rather than victory, may encourage the non-participant to become more active.

The Kuwaiti boys' reasons for non-participation in any physical activity revolved more around the boys' peer group. Many indicated that their friends did not take part in physical activity and they followed suit. Some parents would not give permission for the boy to take part; while some students stated they did not like the teacher or coach. Some boys felt they were not given a fair chance to take part by

the way in which the teams were selected. The reasons given by the Kuwaiti boys leave the impression that they might not posses a negative attitude toward physical activity or physical education, rather, if given the opportunity and encouragement they might be more active.

5.15.5 Seasonal Physical Activity Levels:

Students were asked to remember how many days a week during each of the four seasons they were involved in any physical activity that made them sweat or breathe hard for a minimum of twenty minutes. The British boys indicated summer was their most active season with 62% of the students involved in physical activity three days or more per week. The Kuwaiti boys considered spring their most active time; 65% were involved in physical activity 3 days or more per week. Table 5.8 gives both British and Kuwaiti responses for all seasonal physical activity levels.

Table 5.8 Preliminary study: Students' seasonal activity levels of three days per week- 20 minutes per session.

Season	British n = 112	Kuwaiti n = 133
Spring	54% (n = 61)	65% (n = 86)
Summer	62% (n = 69)	54% (n = 72)
Autumn	51% (n = 57)	40% (n = 53)
Winter	43% (n = 48)	44% (n = 58)

Data in Table 5.8

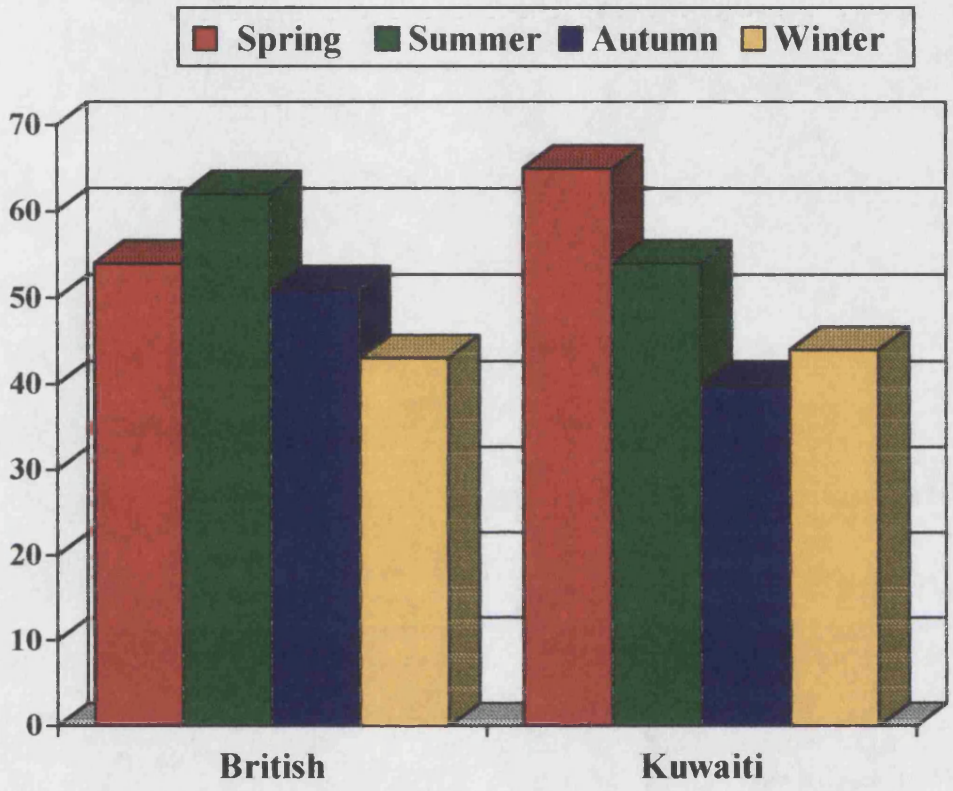


Figure 5.1 Preliminary Study: Seasonal physical activity levels of three days per week, 20 minutes per session, for British and Kuwaiti boys.

5.15.6 Most Popular Physical Activities:

The boys were asked what activities in particular they most enjoyed. Previously both groups had indicated that they engaged in team sports more often than individual sports. Responses in this section closely matched those results. Soccer was the first choice of activity for both groups. Table 5.9 lists the ten most popular physical activities, ranked from one to ten as reported by the students in both groups.

Table 5.9 Preliminary Study: Ten most popular physical activities.

Activity	British	Kuwaiti
Football (Soccer)	1	1
Rugby	2	------
Tennis	3	8
Basketball	4	4
Swimming	5	2
Calisthenics Exercise	6	----
Hockey	6	----
Badminton	7	----
Cricket	8	----
Cycling	9	----
Track & Field	10	10
Jogging	----	3
Volleyball	----	5
Table Tennis	----	6
Handball	----	7
Walking	----	9

From the ten most popular physical activities selected by the two groups only six could be considered lifetime physical activities. The types of activity that both populations stated they were most often involved in were team sports, activities that would not be considered as lifetime physical activities. Because of the number of people needed to participate, team activities are harder to engage in as an adult. The added responsibilities of jobs or family can make participation difficult. Lifetime physical activity is an activity that can be done at any time, with little or no equipment, with the fewest numbers of participants, such as walking, jogging and cycling.

5.15.7 Sedentary Activity Time:

Students were questioned about the various sedentary activities they were engaged in. Sedentary activities took up a large portion of the students out of school free time.

On average the British spent two hours and five minutes on homework while the Kuwaiti students spent two hours and 25 minutes on homework. Television viewing took two hours a day from the British group, and two hours from the Kuwaiti group. British boys spent 35 minutes on video and computer games while the Kuwaiti boys spent 37 minutes on computer games. Sedentary activities therefore took on average four hours and 40 minutes from the British students, and five hours and two minutes from the Kuwaiti students, please refer to figure 5.2.

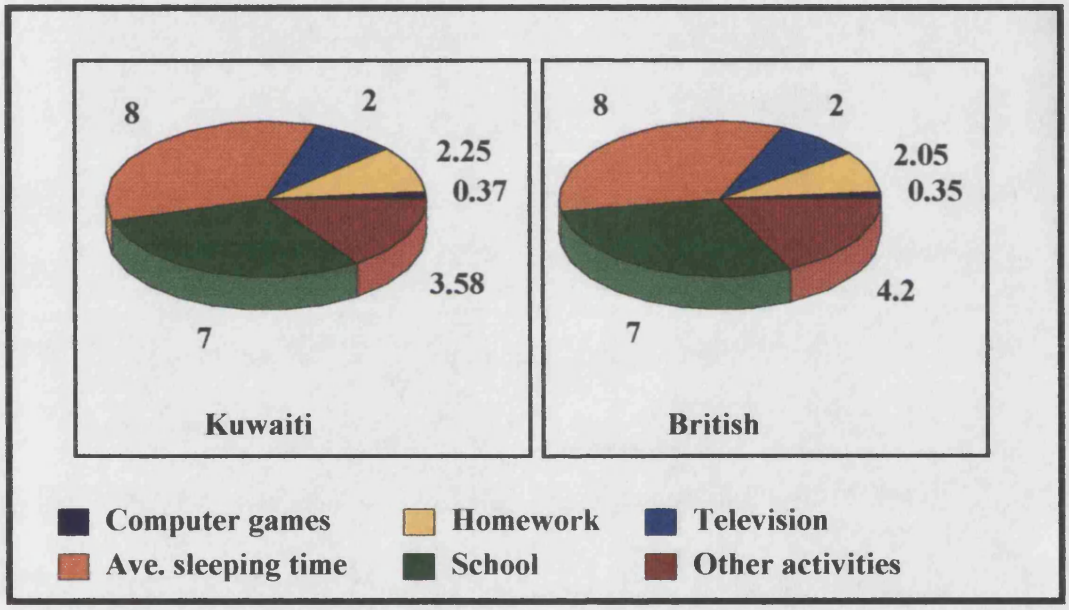


Figure 5.2 Preliminary Study: Hours of daily activities for British and Kuwaiti boys.

5.15.8 Habitual Daily Physical Activity:

Planned physical activities such as games, swimming, or cycling are sometimes seen as demanding or time consuming. Therefore the greater the amount of physical activity an individual can assimilate into his/her daily routine the better. In the case of these school boys it was of interest to learn if they walked to school. If they did walk to and from school daily, this one activity could possibly satisfy the students' physical activity requirements.

The British boys were found to be more active than their Kuwaiti counterparts. While the British boys spent 18.33% (four hours and 40 minutes) of their day involved in sedentary activity, they did include some form of physical activity in their daily tasks. Of the British boys, 49% (n = 55), came to school either by walking or by riding their bike. In contrast 71% (n = 94) of the Kuwaiti boys came to school by a car or bus, even though 52% (n = 69) lived less than one mile from school. The Kuwaiti boys spent 20.83% (five hours) of their free time each day on completely sedentary activities, leaving 33.3% (eight hours) of their time for sleeping, and 16.67% (four hours) of their time for other activities, such as eating, relaxing, and socializing.

In Kuwait the availability of the car, the hot harsh climate throughout most of the year, the early morning start of the school day, or any combination of these factors and others, may have a direct influence on riding, rather than walking to and from school. The reasons behind the Kuwaiti boys lack of physical activity within their daily routine needs more investigation.

5.15.9 Individual Health and Safety Behaviours:

Various health behaviours of the boys were also of interest to the researcher. While as a physical educator I would not usually teach the students about some of these topics they can adversely affect physical fitness. Additionally, the greater number of positive health habits a person possesses the greater his/her chance of success at achieving and maintaining healthful physical activity levels. Conversely, the more poor health habits the more difficult to achieve and maintain healthful physical activity levels.

Various aspects of dietary and general health habits for both groups are shown below:

- 84 % (n = 94) of the British students and 74% (n = 99) of the Kuwaiti students ate breakfast daily.

- 23 % (n = 26) of the British students and 58% (n = 77) of the Kuwaiti students had tried to lose weight at one time.
- 9 % (n = 10) of the British students and 37% (n = 49) of the Kuwaiti students restricted food as their means of weight loss.
- 32 % (n = 36) of the British students and 68% (n = 91) of the Kuwaiti students used exercise to lose or maintain their weight.
- 8 % (n = 8) of the British students and 15% (n = 20) of the Kuwaiti students smoked cigarettes.
- 60 % (n = 68) of the British students and 3 % (n = 4) of the Kuwaiti students drank alcoholic drinks.
- 48 % (n = 56) of the British students and 16% (n = 21) Kuwaiti students had friends who drank alcohol.
- 90 % (n = 101) of the British students and 23% (n = 31) of the Kuwaiti students regularly used car safety belts.
- 63 % (n = 70) of the British students and 33% (n = 44) of the Kuwaiti students rode a bicycle within the two weeks prior to the questionnaire 16% (n = 18) of the British students and 7% (n = 9) of the Kuwaiti students reported wearing any form of safety equipment while riding their bike.
- 38% (n = 43) of the British students lived a mile or less from school, and a corresponding 43 students walked to school; 11% (n = 12) rode their bike and 51% (n = 57) came to school by car or bus.
- 52% (n = 69) of the Kuwaiti students live a mile or less from school , yet 71% (n = 94) came to school by car or bus.

5.16 Preliminary Study: Results of the AAHPERD Health-related Fitness Test

The health-related fitness of the students was of great importance to the researcher. The AAHPERD Health-related Fitness Test battery which is outlined in the AAHPERD Test Manual (1980) was used to assess the students. The fitness test included:

- One Mile Walk/Run
- Sit and Reach Test
- Timed Modified Sit-ups
- Sum of Skinfold Measurements

The one mile walk/run test was administered on the soccer field adjacent to the school, the other fitness tests were administered in the school gymnasium. The mean, median and standard deviation for all fitness tests were calculated. The results for the two groups were compared as a whole and by age group. The significant difference for each test component was calculated for the two groups as a whole and by age group. The significant difference for the one mile walk/run; sit and reach; and timed sit-ups were also contrasted by age with the American norms published in the AAHPERD Technical Manual - Health Related Fitness Tests, 1984 (AAHPERD, 1984). Comparison of the results of the two study groups with American norms would aid the researcher when analysing results of the AAHPERD test battery. In neither the UK nor Kuwait, has youth health-related fitness testing been studied comprehensively enough to reveal national norms. The American data has been the result of several applications of the same tests which yielded very similar test results. The American norms were used as a guidepost for the preliminary study test results.

5.16.1 One Mile Walk/Run for the British and Kuwaiti Boys:

The one mile walk/run was used as an indicator of the cardiovascular fitness of the students. While more exact measurements of cardiovascular fitness can only be achieved by measuring VO2 max in a exercise physiology laboratory, this type of facility is well out of the reach of the average physical education teacher. While it is argued that a running test is affected by body fatness, running efficiency, maturity, and motivation, these things will also effect the student in the exercise physiology laboratory setting. The long distance run has acceptable reliability levels to be used in physical fitness testing. The t-test was able to give a reasonable assessment of the mean difference at the ($p \leq .05$) level. Table 5.10 presents mean, median, first quartile, third quartile, and standard deviation (S) in minutes and seconds for one mile walk/run for British and Kuwaiti boys. Figure 5.3 illustrates the mean, median, first quartile, third quartile, and standard deviation (S) for the British and Kuwaiti on the one mile walk/run test component. Table 5.11 presents mean, median, first quartile, third quartile, and standard deviation (S) for British and Kuwaiti 15 and 16 year old boys on the one mile walk/run test component.

Table 5.10 Preliminary Study: One mile walk/run test results in minutes and seconds.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	**7.40**	**7.28**	**8.11**	**6.53**	**1.04**	**150**
Kuwaiti	**9.41**	**8.53**	**10.55**	**8.07**	**2.07**	**85**

Data in table 5.10

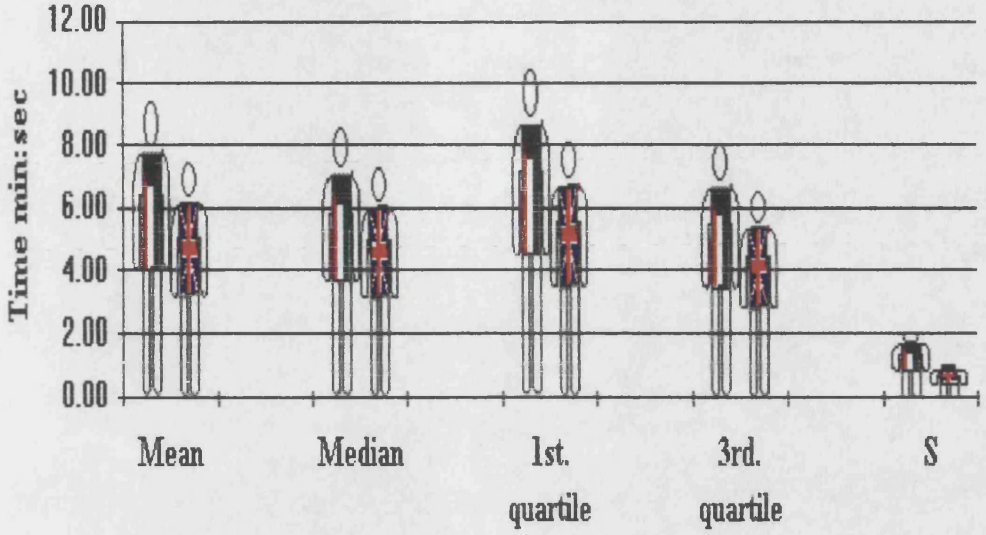


Figure 5.3 Preliminary Study: One mile walk/run results in minutes and seconds for the British and Kuwaiti boys.

Table 5.11 Preliminary Test: Mean/ Median/ 1st Quartile/ 3rd Quartile/ Standard Deviation (S) for 15 and 16 year olds British and Kuwaiti Boys on the one mile walk/run test, results in minutes and seconds.

	British Boys		Kuwaiti Boys	
Age	**15 Year Old**	**16 Year Old**	**15 Year Old**	**16 Year Old**
Mean	**7.39**	**7.42**	**9.42**	**9.36**
Median	**7.28**	**7.25**	**9.16**	**8.44**
1st. quartile	**8.12**	**8.07**	**10.50**	**11.00**
3rd. quartile	**6.56**	**6.48**	**8.10**	**7.58**
S	**1.05**	**1.03**	**2.05**	**2.20**
N	**102**	**48**	**67**	**18**

Results of the one mile walk/run the British and Kuwaiti boys as single groups yielded a value of $t = 8.38$. There is a significant difference between the two groups well beyond the ($p \leq 0.05$) level, please refer to figure 5.4.

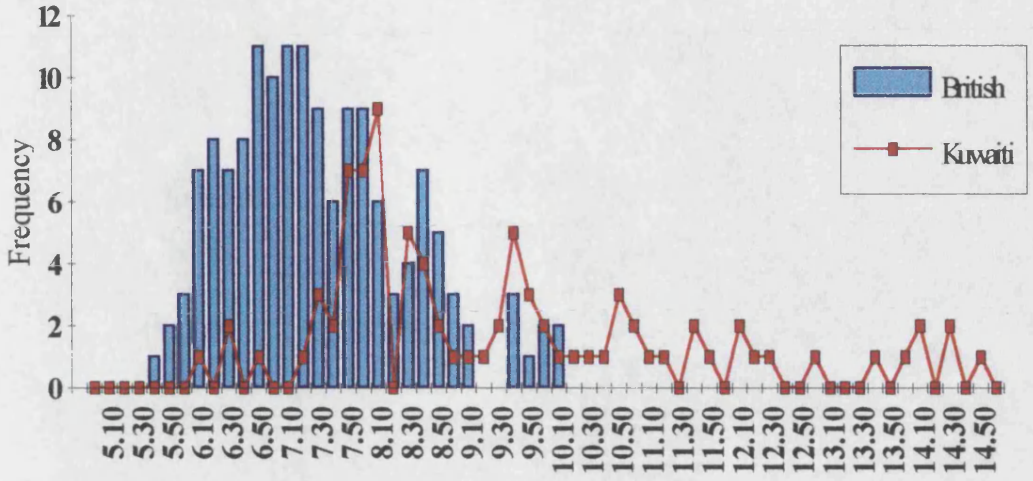


Figure 5.4 Preliminary Study: One mile walk/run test results in minutes and seconds for the British and Kuwaiti boys.

Breaking the two groups down by age resulted in the value of t = 7.52 for the 15 year old boys, a significant difference at ($p \leq 0.05$) level, refer to figure 5.5. Comparison of the 16 year old boys resulted in the value of t = 3.59, there is a significant difference between these two groups at the ($p \leq 0.05$) level, please refer to figure 5.5.

The researcher acknowledges that the two groups are not always homogeneous in variance. While difference in variance between two groups generally contra-indicates the use of the t-test the researcher nevertheless elected to use t-test, with caution, to indicate the extent of differences between the two groups. A basic significance level of ($p \leq .05$) was adopted although the level of significance as seen from the value of t, is often well beyond this value. It is essential the results are treated with caution if group variances are considerably different and the value of t, is near the borderline of t=2.00. Interpretations made about the mean scores of the two groups when the variances differ greatly are made with discretion. While there is considerable overlap between the UK and Kuwaiti groups, importantly there is a long tail in the Kuwaiti performance that underlines the different composition of the two groups. This variance could indicate many things, body composition as can be

seen in figure 5.13 and body weight as can be seen in appendix H, table 4 could be implicated. Other factors, such as running skill, maturity, and motivation, could also affect test results

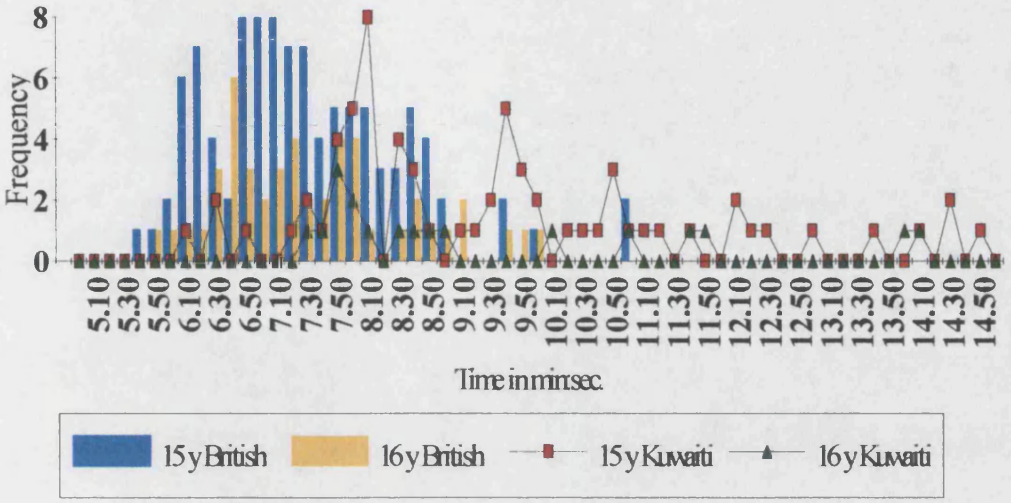


Figure 5.5 Preliminary Study: One mile walk/run test results in minutes and seconds for the 15 and 16 year old British and Kuwaiti boys.

Comparison of Run/Walk Fitness Test Results for American, British, and Kuwaiti Boys:

When contrasting the norms for American 15 year old boys with the test results for British 15 year old boys the resulting value was, $t = .67$, indicating no significant difference between the two groups at the ($p \leq 0.05$) level. However, when contrasting the norms for 15 year old American boys with the test results of the 15 year old Kuwaiti boys the resulting value of $t = 7.15$ indicated a significant difference between the American norms and Kuwaiti groups at the ($p \leq 0.05$) level.

Contrasting the norms for American 16 year old boys with the test results of the British 16 year old boys resulted in the value of $t = 1.44$, again indicating no significant difference between these two groups on this test. The norms for American 16 year olds when contrasted with the test results for the Kuwaiti 16 year olds resulted in the value of $t = 2.93$ which indicates a significant difference between these two groups at the ($p \leq 0.05$) level.

Table 5.12 Preliminary Test: Mean and standard deviation (S) for 15 year old American, British, and Kuwaiti boys on the one mile walk/run test in minutes and seconds.

	Mean	S	N
American	7.49	1.60	218
British	7.39	1.05	102
Kuwaiti	9.42	2.05	67

Table 5.13 Preliminary Test: Mean and standard deviation for 16 year old American, British, and Kuwaiti boys on the one mile walk/run test in minutes and seconds.

	Mean	S	N
American	7.75	2.30	162
British	7.42	1.03	48
Kuwaiti	9.36	2.20	18

Table 5.14 Preliminary Study: Percentile ranking of American, British and Kuwaiti 15 and 16 year olds on the one walk/run fitness test, in minutes and seconds.

	British Boys		American Norms		Kuwaiti Boys	
Percentile	15 years	16 years	15 years	16 years	15 years	16 years
99	5.52	6.08	5.44	5.40	6.36	7.48
95	6.16	6.27	6.01	5.48	6.51	7.48
90	6.21	6.34	6.08	6.02	7.47	7.52
85	6.28	6.41	6.18	6.12	7.54	7.58
80	6.41	6.46	6.29	6.22	8.06	7.58
75	6.57	6.52	6.35	6.28	8.11	8.03
70	7.00	6.58	6.42	6.41	8.16	8.03
65	7.05	7.09	6.56	6.47	8.19	8.07
60	7.13	7.18	7.02	6.53	8.34	8.16
55	7.18	7.21	7.07	7.03	8.45	8.39
50	7.28	7.28	7.14	7.11	9.16	8.44
45	7.38	7.39	7.23	7.19	9.42	8.53
40	7.43	7.51	7.30	7.27	9.46	9.01
35	7.51	7.55	7.41	7.40	9.53	10.12
30	8.04	8.04	7.52	7.51	10.22	11.00
25	8.12	8.08	8.04	8.07	10.55	11.04
20	8.29	8.31	8.26	8.41	11.04	11.04
15	8.46	8.55	8.48	9.10	12.17	11.59
10	8.50	9.11	9.25	9.52	12.38	14.07
5	9.42	9.50	10.37	10.40	14.12	14.12

5.16.2 Sit and Reach for British and Kuwaiti Boys:

The purpose of the sit and reach test component was to evaluate lower back and lower thigh flexibility. Poor extensibility in these areas is associated with musculo-skeletal problems. Chronic back pain is also often associated with poor flexibility. Table 5.15 presents the mean, median, first quartile, third quartile, and standard deviation for the British and Kuwaiti boys sit and reach test results in cm. Figure 5.6 presents data as in table 5.15. Table 5.16 displays the mean, median, first quartile, third quartile, and standard deviation for the 15 and 16 year old British and Kuwaiti Boys on the sit and reach test component in cm.

Table 5.15 Preliminary Study: Sit and reach test results in cm for British and Kuwait boys.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	**22.86**	**22**	**17**	**28**	**8.39**	**171**
Kuwaiti	**23.13**	**23**	**18**	**29.50**	**8.42**	**107**

Data in table 5.15

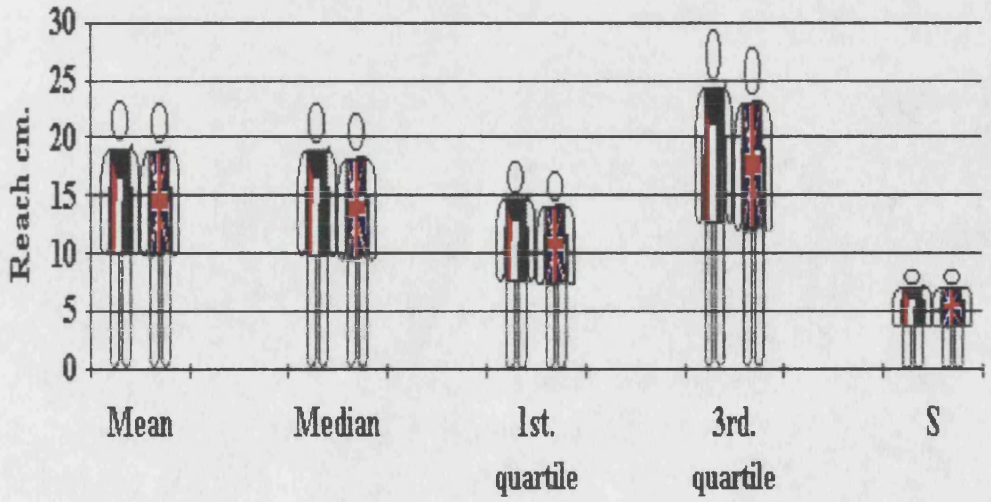


Figure 5.6 Preliminary Study: Sit and reach test results in cm for the British and Kuwaiti boys.

Table 5.16 Preliminary Study: Mean, median, 1st. quartile, 3rd quartile, and standard deviation for 15 and 16 year old British and Kuwaiti Boys on the sit and reach test results in cm.

	British Boys		Kuwaiti Boys	
Age	**15 Years Old**	**16 Years Old**	**15 Years Old**	**16 Years Old**
Mean	**22.86**	**22.45**	**22.91**	**24.16**
Median	**22**	**22**	**23.50**	**23**
1st. quartile	**17**	**17**	**18**	**20.50**
3rd. quartile	**28**	**29**	**29**	**31.50**
S	**8.63**	**8.44**	**8.54**	**7.96**
N	**118**	**53**	**88**	**19**

Results for the sit and reach test yielded the value of $t = .26$ when comparing the entire group of British and Kuwaiti boys, there is therefore no significant difference between the two groups at the ($p \leq 0.05$) level, please refer to figure 5.7.

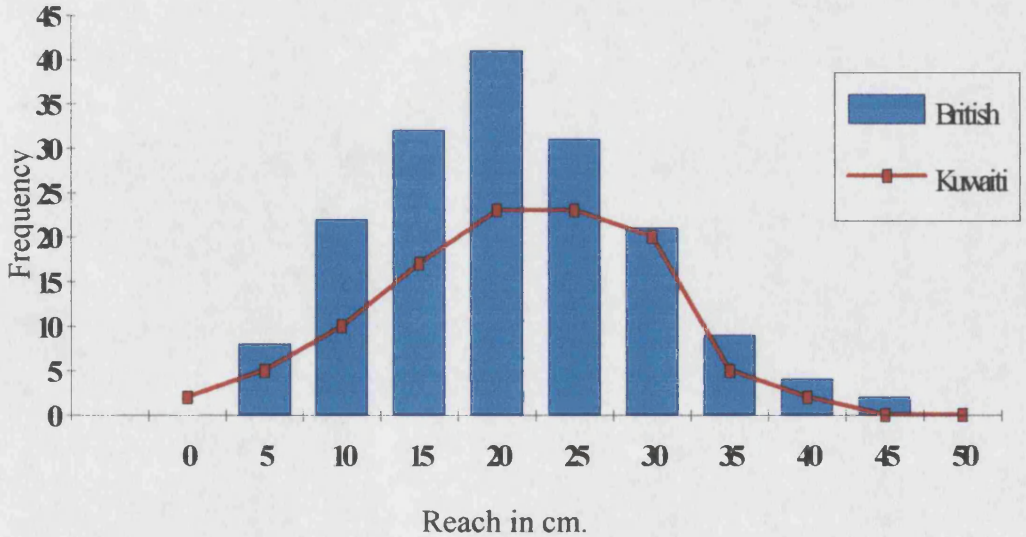


Figure 5.7 Preliminary Study: Sit and reach test results in cm for British and Kuwaiti boys.

When examining the results by age there was again no significant difference. The comparison of test results for the 15 year old boys yielded t = .04; test results for the 16 year olds yielded the value t = .79, no significant difference at the ($p \leq 0.05$) level, please refer to figure 5.8.

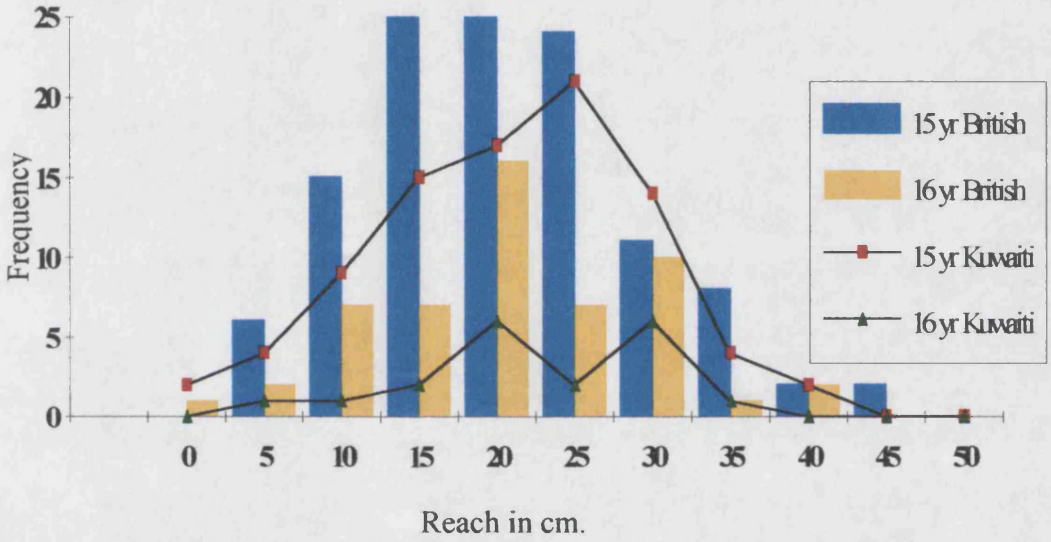


Figure 5.8 Preliminary Study: Sit and reach test results in cm for the 15 and 16 year old British and Kuwaiti boys.

Comparison of Sit and Reach Test Results for American, British and Kuwaiti Boys:

Table 5.17 presents the mean and standard deviation (S) for 15 year old American, British, and Kuwaiti boys on the sit and reach test in cm. Table 5.18 presents the mean and standard deviation for 16 year old American, British, and Kuwaiti boys on the sit and reach test in cm. Table 5.19 exhibits the percentile ranking of American, British and Kuwaiti 15 and 16 year olds on the sit and reach fitness test.

Table 5.17 Preliminary Study: Mean and standard deviation for 15 year old American, British, and Kuwaiti boys on the sit and reach test, results in cm.

	Mean	S	N
American	29.22	7.32	236
British	22.86	8.63	118
Kuwaiti	22.91	8.54	88

Table 5.18 Preliminary Study: Mean and standard deviation for 16 year old American, British, and Kuwaiti boys on the sit and reach test, results in cm.

	Mean	S	N
American	29.73	8.94	204
British	22.45	8.44	53
Kuwaiti	24.16	7.96	19

Table 5.19 Preliminary Study: Percentile ranking of American, British and Kuwaiti 15 and 16 year olds on the sit and reach fitness test, results in cm.

	British Boys		American Norms		Kuwaiti Boys	
Percentile	15 years	16 years	15 years	16 years	15 years	16 years
99	46	40	47	45	41	33
95	38	34	41	42	35	33
90	34	32	39	40	32	33
85	32	30	37	38	31	32
80	30	30	36	37	29	32
75	28	29	34	36	29	31
70	27	26	33	35	27	30
65	25	25	32	34	26	27
60	24	24	32	32	25	26
55	23	23	31	31	24	23
50	22	22	30	30	23	23
45	21	21	29	29	22	21
40	19	20	28	28	20	21
35	18	19	27	27	19	21
30	18	19	26	26	18	20
25	17	17	24	25	17	20
20	15	15	23	23	15	17
15	13	14	22	21	14	11
10	11	13	19	18	11	11
5	9	5	13	11	6	7

There is however a significant difference between the American norms for 15 year old boys and the test results of British 15 year old boys which yielded the value of $t = 6.84$ at the ($p \leq 0.05$) level.

There was also a significant difference between the norms for 15 year old Americans and the tests results for 15 year old Kuwaiti boys, with the value of $t = 6.13$ at the ($p \leq 0.05$) level.

Contrasting the American norms for 16 year olds with the test results for the 16 year old British boys yielded the value of $t = 5.52$ resulting in a significant difference at ($p \leq 0.05$) level.

Contrasting the American norms and the results for Kuwaiti 16 year olds the value $t = 2.89$ indicated a significant difference between the two groups at the ($p \leq 0.05$) level.

5.16.3 Sit-ups for the British and Kuwaiti Boys:

The modified timed sit-up test component was used to measure abdominal strength. Weak abdominal muscles are often associated with low back pain and other musculo skeletal problems in the abdominal and hips areas. These ailments can be particularly debilitating as a person grows older. Table 5.20 presents the mean, median, first quartile, third quartile, and standard deviation for the timed sit-up test results of the British and Kuwaiti Boys. Figure 5.9 illustrates data in table 5.20. Table 5. 21 presents the mean, median, first quartile, third quartile, and standard deviation for the 15 and 16 year old British and Kuwaiti boys on the timed sit-up test. Results represent the number of completed sit-ups in one minute.

Table 5.20 Preliminary study: Timed sit-up test results for British and Kuwaiti boys.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	37.42	37	32.50	41	6.58	171
Kuwaiti	30.93	30	25.50	34	7.38	104

Data in table 5.20

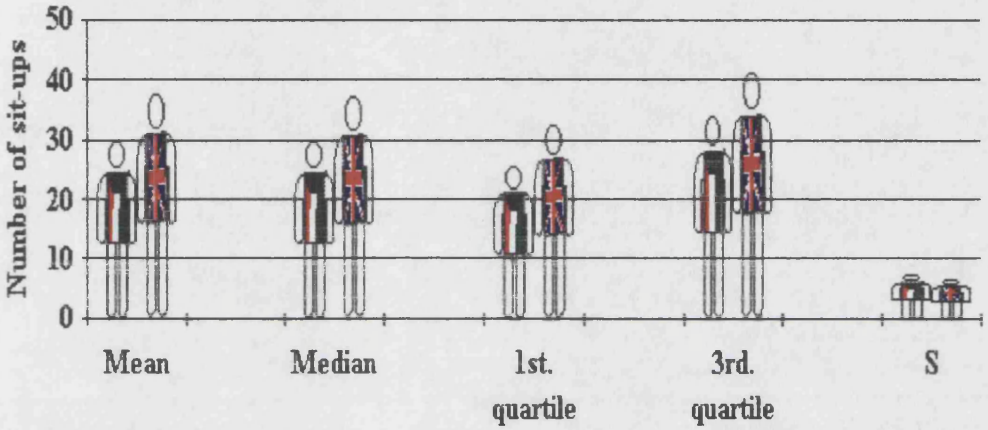


Figure 5.9 Preliminary Study: Timed sit-ups test results for the British and Kuwaiti boys.

Table 5.21 Preliminary Study: Timed sit-ups test results for British and Kuwaiti 15 and 16 year old boys.

	British Boys		Kuwaiti Boys	
Age	15 Year Old	16 Year Old	15 Year Old	16 Year Old
Mean	37.44	37.38	29.45	29.89
Median	37	37	30	27
1st. quartile	32	32	25	25
3rd. quartile	41	43	34	35
S	6.63	6.53	8.59	8.43
N	118	53	85	19

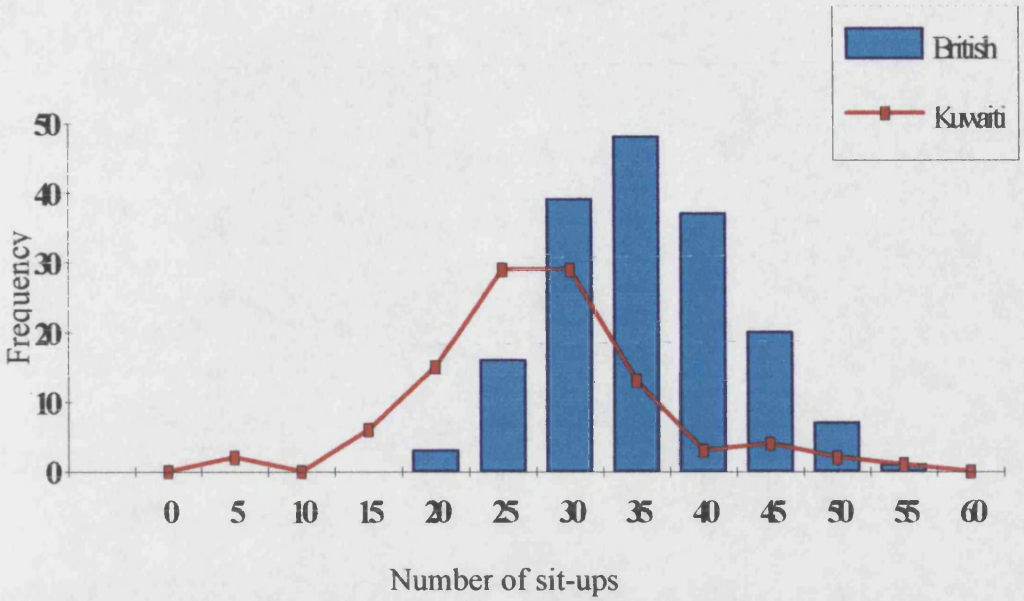


Figure 5.10 Preliminary Study: Sit-up test results for the British and Kuwaiti boys.

On this test the value t = 7.38 for the British and Kuwaiti boys as a group indicated a significant difference at the ($p \leq 0.05$) level, refer to figure 5.10.

Dividing the group by age yielded the value of t = 7.20 for the 15 year old British and Kuwaiti boys. There is a significant difference between these two groups at the ($p \leq 0.05$) level, refer to figure 5.11. The comparison of the 16 year old British and Kuwaiti boys yielded the value of t = 3.52 a significant difference at the ($p \leq 0.05$) level, please refer to figure 5.11.

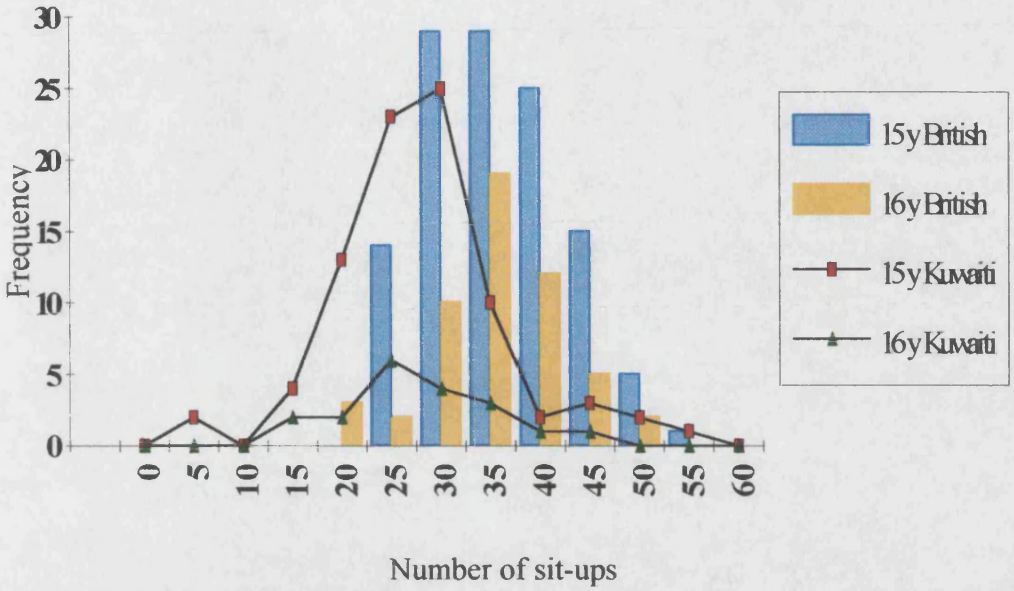


Figure 5.11 Preliminary Study: Sit-up test results for 15 and 16 year old British and Kuwaiti boys.

Comparison of timed sit-up test results: American, British, and Kuwaiti boys:

Table 5.22 presents the mean and standard deviation for 15 year old American, British, and Kuwaiti boys on the timed sit-up test. Table 5.23 presents the mean and standard deviation for 16 year old American, British, and Kuwaiti boys on the timed sit-up test. Table 5.24 represents the percentile ranking of American, British and Kuwaiti 15 and 16 year old on the timed sit-ups fitness component.

Table 5.22 Preliminary Study: Comparison of American, British, and Kuwaiti 15 year old boys on timed sit-up test component.

	Mean	S	N
American	**45.02**	**10.06**	**238**
British	**37.44**	**6.63**	**118**
Kuwaiti	**29.45**	**8.59**	**85**

Table 5.23 Preliminary Study: Comparison of American, British, and Kuwaiti 16 year old boys on timed sit-up test component.

	Mean	S	N
American	43.89	9.20	189
British	37.38	6.53	53
Kuwaiti	29.89	8.43	19

Table 5.24 Preliminary Study: Percentile ranking of American, British and Kuwaiti 15 and 16 year old on the timed sit-ups fitness component.

	British Boys		American Norms		Kuwaiti Boys	
Percentile	15 years	16 years	15 years	16 years	15 years	16 years
99	52	50	69	70	50	43
95	49	46	59	61	48	43
90	46	45	55	59	38	39
85	45	44	52	55	35	38
80	44	43	50	53	34	37
75	41	42	49	51	33	33
70	40	40	48	50	32	32
65	39	39	47	49	31	31
60	39	39	46	47	30	30
55	38	38	45	46	29	27
50	37	37	44	45	29	27
45	36	36	42	44	28	26
40	35	36	41	42	27	26
35	34	35	40	40	26	25
30	33	33	39	39	25	25
25	32	32	38	38	24	24
20	31	31	36	35	23	24
15	30	30	34	33	22	22
10	29	29	31	30	21	18
5	27	24	28	28	17	16

Contrasting the norms for 15 year old American boys with the British 15 year old boys test results on the sit-up test the value of $t = 8.52$ indicated a significant difference between them at the ($p \leq 0.05$) level.

The difference between the norms for American 15 year old and Kuwaiti 15 year old test results for the timed sit-ups was the value of $t = 13.66$, which indicates a significant difference between the two groups at the ($p \leq 0.05$) level.

The norms for 16 year old American boys and the test results for British 16 year old boys yielded the value of $t = 5.81$ for the sit-up component which indicates a significant difference at the ($p \leq 0.05$) level.

Contrasting the norms for the 16 year old American boys with the results of the Kuwaiti 16 year old boys the value of $t = 6.83$ for the sit-up test indicated a significant difference between the two groups at the ($p \leq 0.05$) level.

5.16.4 Sum of Triceps and Subscapular Skinfold Measurements in (mm.) for British and Kuwaiti Boys:

The purpose of the skinfold measurements was to evaluate the level of fatness of the boys. Again, it must be acknowledged that greater accuracy can be achieved in the exercise physiology lab using hydrostatic weighing, however the average physical education teacher does not have access to such equipment. There is a growing concern over weight of school children. Forbes (1975) found that approximately 25% of all school children were overweight. Many children who could be classified as overweight have been found at the nursery school age level (Ginsberg-Fellner, Jagendorf, Carmel, & Harris, 1981). The physical and psychosocial difficulties that can be associated with obesity can be assessed and addressed in the PE lesson (Wolf, Cohen, & Rosenfeld, 1985). For these reasons the skinfold measurements were used in this study. Table 5.25 presents the mean, median, first quartile, third quartile, and standard deviation for skinfold measurements for British and Kuwaiti Boys. Figure 5.12 illustrates the data in table 5.25. Table 5.26 presents the mean, median, first quartile, third quartile, and standard deviation for the 15 and 16 year old British and Kuwaiti boys on the skinfold measurement test component. Results are reported in mm.

Table 5.25 Preliminary Study: Sum of triceps and subscapular skinfold measurements in (mm) for British and Kuwaiti boys.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	20.98	17	21.50	14.50	11.18	168
Kuwaiti	30.32	21	43	14	20.79	107

Data in table 5.25

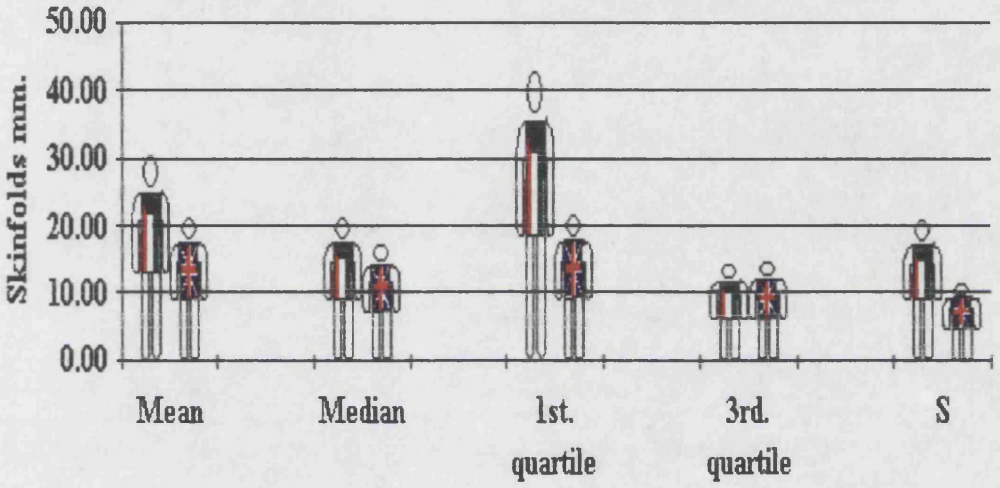


Figure 5.12 Preliminary Study: Sum of triceps and subscapular skinfold measurements in (mm) for the British and Kuwaiti boys.

Table 5.26 Preliminary Study: Sum of triceps and subscapular skinfold measurements in (mm) for the 15 and 16 year old British and Kuwaiti boys.

	British Boys		Kuwaiti Boys	
Age	15 Year Old	16 Year Old	15 Year Old	16 Year Old
Mean	21.87	18.88	31.61	24.15
Median	17.25	16.50	23	17
1st. quartile	21.50	19.75	48.50	29.50
3rd. quartile	14.50	14	15.50	12
S	12.41	7.21	21.13	18.05
N	118	50	87	20

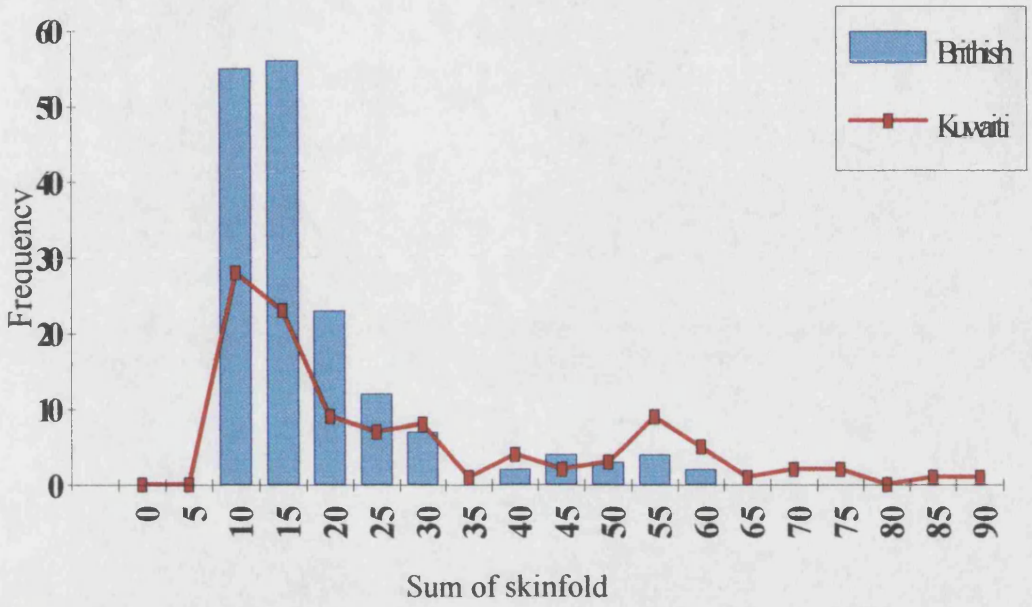


Figure 5.13 Preliminary Study: Sum of triceps and subscapular skinfold measurement in (mm) for British and Kuwaiti boys.

Results for this test yielded the value t = 5.02 between the British and Kuwaiti boys as a group, there is therefore a significant difference between the two groups for the sum of skinfolds test component at the ($p \leq 0.05$) level, please refer to figure 5.13.

When breaking down the group by age the significant difference for the 15 year old British and Kuwaiti boys was t = 3.83, indicating a significant difference at the ($p \leq 0.05$) level, please refer to figure 5.14.

Comparison of the 16 year old British and Kuwaiti boys yielded the value of t = 1.27, there is no significant difference ($p \leq 0.05$) between the two groups at this age level for the sum of skinfold measurements, please refer to figure 5.14.

Once again the researcher acknowledges the difference in variance between the two groups. It is considered essential to treat results with caution if the value of t is near the borderline of t=2.00. Interpretations made about the composition of the two groups when the variance differ greatly must be made with care.

As was seen previously on the one mile walk/run test component, while there is considerable overlap between the UK and Kuwaiti boys within the lean score areas

on the skinfold measurements, there were many Kuwaiti students who fall at the extreme end of the measurement scale, please refer to table 5.25. This difference in variance could be due to many factors. Genetic differences within the UK group and the Kuwaiti group, as well as genetic differences within the Kuwaiti group itself could have affected the scores. However, due to its complexity, this factor was beyond the scope of this study and was not investiagted.

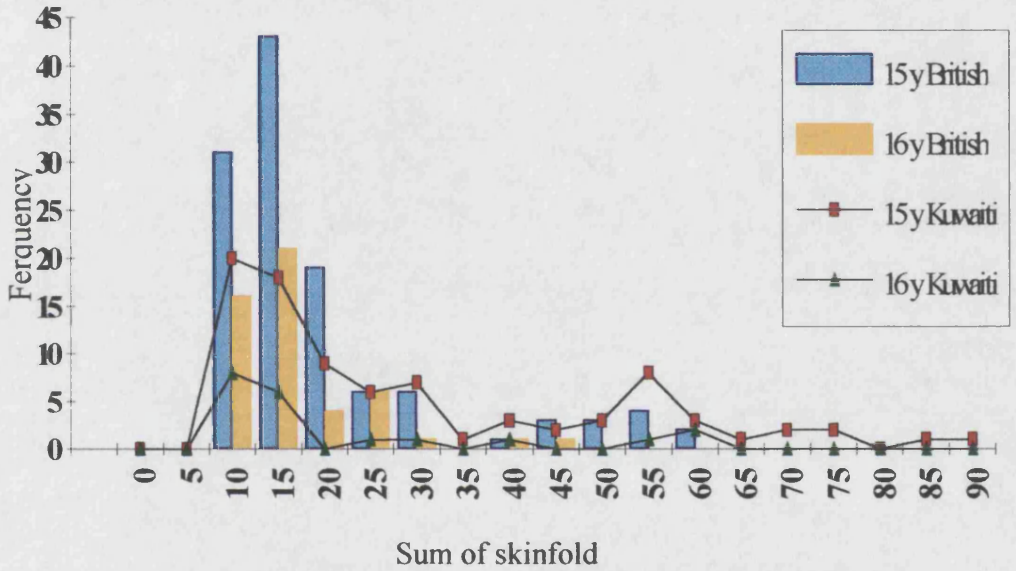


Figure 5.14 Preliminary Study: Sum of triceps and subscapular skinfold measurement in (mm) for 15 and 16 year old British and Kuwaiti boys.

Comparison of Sum of triceps and subscapular Skinfold Measurements: American, British, and Kuwaiti boys.

The comparison of skinfold measurements can only be for the percentile ranking. The test results presented by mean and standard deviation were not available for the skinfold measurements. The AAHPERD Test Manual (1980) presents only the percentile ranking by age for this test component. Table 5.27 represents the percentile ranking of American, British and Kuwaiti 15 and 16 year old boys on the sum of skinfold fitness component.

Table 5.27 Preliminary Study: Percentile ranking of American, British, and Kuwaiti 15 and 16 year old boys on sum of triceps and subscapular skinfold measurement test component (in mm).

	British Boys		American Norms		Kuwaiti Boys	
Percentile	15 years	16 years	15 years	16 years	15 years	16 years
99	11	12	8	8	11	11
95	12	12	9	9	12	11
90	12	13	10	10	12	11
85	13	13	11	11	13	12
80	14	14	11	11	14	12
75	15	14	12	12	16	13
70	15	15	12	12	17	13
65	16	16	13	13	18	14
60	16	16	13	13	19	15
55	17	17	14	14	22	17
50	17	17	14	14	24	17
45	18	18	15	15	25	18
40	19	18	16	16	29	18
35	20	19	18	17	32	19
30	21	19	18	18	42	29
25	22	21	20	20	49	31
20	26	24	22	22	55	40
15	32	27	25	24	58	59
10	45	28	30	29	62	63
5	55	30	40	37	77	64

5.17 Discussion of Preliminary Test Results:

The findings of the health-related fitness tests for the British and the Kuwaiti boys indicated low levels of physical activity for both groups. The Kuwaiti group had significantly lower results than the British boys on both the survey and the health-related fitness test. In addition the Kuwaiti group had only 45 minutes of physical education per week compared to 50-85 minutes for the UK group. There is need for more appropriate physical activity for both groups. Physical education programmes which encourage students to be more active inside and outside school could prove to be a viable solution to the problem of low levels of habitual activity.

Health and fitness are not things that can be stored for when you need them. They have to be worked at, and kept up throughout life; it must be a part of everyday

life. It seems from the results obtained in this study that the physical education lessons in Avon local education authority and in Kuwait are not fulfilling their potential. Physical education in public school has to be more than time away from traditional academic lessons. For physical education to be more constructive, and to possibly have a positive influence on the students' health and way of thinking, the lessons have to be fun, yet challenging; providing self satisfaction for every individual. They must address the student mentally as well as physically. In this manner the lesson might encourage students to continue to be physically active into and throughout adulthood.

Health-related fitness of British and Kuwaiti Boys:

Results of the fitness test revealed that the British boys were more fit than their Kuwaiti counterparts. On the one mile walk/run there was a two minute difference in the mean score of the two groups, the UK group was able to complete the test in less time than the Kuwaiti group. British results were also within a more concentrated time frame than the Kuwaiti boys. The Kuwaiti boys results were quite spread out, ranging from six and a half minutes to more than fourteen.

There was no significant difference between the two groups on the sit and reach test. There was however a significant difference on the sit- up test component. The UK boys were able to complete more sit-ups than the Kuwaiti boys. The most striking difference between the two groups was on the sum of skinfold. The Kuwaiti boys results were very high, the UK boys were significantly leaner. This test seems to corroborate with results of the one mile walk/run test where the British boys were able to complete the test in a significantly shorter time period.

The comparison of the test groups results and published American norms presented the researcher with some interesting results. The results between the American norms and British boys were very similar on the fitness test battery. There was no significant difference between the British and American scores on the one

mile run/walk. Sit and reach test results indicated American results were significantly higher than the UK results. Tables 5.28 and 5.29 present a brief comparison of the three groups on the sit-up and sum of skinfold fitness tests respectively.

Table 5.28 Comparison of British, American and Kuwaiti boys on the timed sit-up test component.

	British Boys		American Boys		Kuwaiti Boys	
%	15 yr. old	16 yr. old	15 yr. old	16 yr. old	15 yr. old	16 yr. old
99%	52	50	69	70	50	43
55%	38	38	45	46	29	27
5%	27	24	28	28	17	16

Table 5.29 Comparison of British, American and Kuwaiti boys on the sum of skinfold test component

	British Boys		American Boys		Kuwaiti Boys	
%	15 yr. old	16 yr. old	15 r old	16 yr. old	15 yr. old	16 yr. old
99%	11	12	8	8	11	11
55%	17	17	14	14	22	17
5%	55	30	40	37	77	64

As with the British group, when the Kuwaiti results were compared with the American norms the Kuwaiti results were significantly poorer.

On the one mile run/walk which measures cardio-respiratory endurance only 5% (n = 4) of the Kuwaiti boys managed to finish within six minutes; 48% (n = 41) of the group finished in nine minutes or more; 94% (n = 63) of the 15 year old students

did not reach the 50th percentile ranking of the American norms for 15 year old boys, while none of the 16 year old boys were able to reach the 50th percentile ranking of the American norms for 16 year olds.

Test results for the remaining components were equally poor; on the sit-and-reach component , 45% (n = 40) of the 15 year old and 47% (n = 9) of the 16 year old Kuwaiti boys could not reach their toes. When compared to American norms 77% (n = 68) of the 15 year old and 63% (n = 12) of the 16 year old did not reach the 50th percentile. On the modified timed sit-ups 93% (n = 79) of the 15 year old and 95% (n = 18) of the 16 year old Kuwaiti boys did not reach the 50th percentile of the American norms. On the skinfold measurements 77% (n = 66) of the 15 year old and 60% (n = 12) of the 16 year old Kuwaiti boys did not reach the 50th percentile of the American norms.

Results of the health-related fitness tests indicated that the Kuwaiti students were in significant need of investigation. The results for the UK group were significantly better on three of the four fitness tests. However, when the UK group was compared to American norms of boys of the same age, results indicated that British test scores were significantly lower on three of four tests. While the UK group was found to have higher health fitness levels than the Kuwaiti group, when the UK test results were contrasted with American norms it was found that the UK boys could also benefit from a programme designed to address the students health-related fitness.

5.18 Summary of the Key Findings of the Preliminary Study:

Table 5.30 Summary of key findings on lifestyle, physical activity and physical education questionnaire.

	British boys	Kuwaiti boys
Duration of physical education lessons	50-85 minutes	45 minutes
Activities outside of physical education	79% (n = 88) in school 85% (n = 95) outside of school	42% (n = 56) in school 58% (n = 77) outside of school
Type of activity	50% (n = 48) team 29% (n = 28) individual	65% (n = 50) team 6% (n = 5) individual
Reasons given for non-participation	1. Not good at sport 2. Dislike coach/leader 3. Always picked last	1. Always picked last 2. Friends don't play 3. Too much homework
Seasonal activity levels	Spring 54% (n = 61) Summer 62% (n = 69) Autumn 51% (n = 57) Winter 43% (n = 48)	Spring 65% (n = 86) Summer 54% (n = 72) Autumn 40% (n = 53) Winter 44% (n = 58)
Most popular physical activities	1. Soccer 2. Rugby 3. Tennis	1. Soccer 2. Swimming 3. Jogging
Sedentary after school hours	4 hours and 40 minutes	5 hours
Habitual physical activity	49% (n = 55) walk to school daily	71% (n = 94) ride to school daily
Various health behaviours	a.) 8% (n = 8) smoke cigarettes b.) 60% (n = 68) have had alcoholic beverage c.) 90% (n = 101) use car safety belts	a.) 15% (n = 20) smoke cigarettes b.) 3% (n = 4) have had alcoholic beverage c.) 23% (n = 31) use car safety belts

Table 5.31 A-D Summary of findings on health-related fitness tests.

Table A: One mile walk/run.

One mile walk/run	British boys		Kuwaiti boys	
%	15 yr. old	16 yr. old	15 yr. old	16 yr. old
99%	5.52	6.08	6.36	7.48
55%	7.18	7.21	8.45	8.39
5%	9.42	9.50	14.12	14.12

Table B: Sit and reach.

Sit and reach	British boys		Kuwaiti boys	
%	15 yr. old	16 yr. old	15 yr. old	16 yr. old
99%	46	40	41	33
55%	23	23	24	23
5%	9	5	6	7

Table C: Sit-ups.

Sit-ups	British boys		Kuwaiti boys	
%	15 yr. old	16 yr. old	15 yr. old	16 yr. old
99%	52	50	50	43
55%	38	38	29	27
5%	27	24	17	16

Table D: Sum of tricep and subscapular skinfold measurements.

Sum of skinfold measurements	British boys		Kuwaiti boys	
%	15 yr. old	16 yr. old	15 yr. old	16 yr. old
99%	11	12	11	11
55%	17	17	22	17
5%	55	30	77	64

Chapter Six
Methods, Results and Interpretations of the Intervention Study

6.0 Introduction to the Intervention Study:

This section discusses the different stages of the development of the attitude scale, health-related fitness programme and the knowledge test. After analysis of the British and Kuwaiti boys preliminary study data obtained with the Lifestyle, Physical Activity, and Physical Education Questionnaire, and the AAHPERD Health-related Fitness Test several avenues of inquiry were found. Would it be possible for a physical education program to broaden the student's knowledge regarding physical activity and health? Could physical education lessons encourage a more positive attitude toward physical activity? Is it possible for physical education to effect lifestyle changes? Can a different direction in physical education, i.e., geared toward health fitness and personal activity, have a measurable effect on an individuals health fitness? Can the non-athlete be more involved in physical activity in PE lesson, thereby encouraging more physical activity in the individual lifestyle?

The information contained in this chapter will be presented in two parts. Part (I) contains information regarding the methods used to develop the test instruments used in the intervention study. Part (II) contains complete results and discussion of the data obtained through the implementation of the intervention study.

Part I Methods of the Intervention Study:

6.1 The Development of the Attitude Scale:

One of the major findings of the preliminary study was the need for an attitude assessment instrument. It was necessary to understand how the pupils viewed physical education and physical activity. This instrument was used to measure the changes in the affective domain.

"The affective domain is associated with feelings and attitudes regarding health issues. It can include self - health concepts as well as social health concepts. This domain is characterized chiefly by changes relative to interests, feelings, appreciation's, attitude, and values." (Bedworth & Bedworth, 1992, p.47).

Some established physical education programmes have constructed test instruments to measure changes in students attitude toward physical activity or physical education. The researcher tried to find a previously established test instrument to use in this study. However, as each instrument is developed for a specific reason or specific group or age, finding a published test which closely paralleled the present topic and the subjects' characteristics was not possible. No published attitude scale, with the essential components, was available. It was at this point the researcher decided to construct an attitude scale that took into consideration the students characteristics and cultures.

The most widely used method of assessment of attitude is the Likert scale (Safrit & Wood, 1989). A Likert scale asks an individual to respond to a series of statements by indicating whether she or he strongly agree (SA), agree (A), is undecided (U), disagree (D), or strongly disagree (SD) with each statement (Likert, 1932). To construct an attitude scale to measure attitude toward physical activity and physical education, that would be appropriate for the research purpose, the researcher followed the procedures outlined by Henerson, et al. (1987), and by McGovern (1985), on how to construct a Likert attitude rating scale.

The researcher collected a large pool of opinion statements regarding adolescents attitudes toward physical activity and physical education from a total of 500 students. Two hundred students were from England, and 300 students were from Kuwait. These respondents were similar in cultural characteristics and age of the students who would take part in the intervention study. The students were asked in an open ended question to express their attitude or feeling toward physical activity and physical education in five statements. The pool of 69 statements was then given to 12 experts in the area of education and physical education, six experts in England,

and six experts in Kuwait. These experts were asked to review the items for ambiguity, wording, and face validity. The experts agreed that the scale was too long and contained redundant items, as well as some factual statements. The scale was reduced to 40 items. The researcher was using two subject groups coming from two different cultures or backgrounds. The statements coming from the two groups could reflect cultural influences and not be appropriate for both groups. Because the resulting data was to be compared for similarities and differences within the two groups the researcher could use only one instrument to assess the two groups. It was decided to do item analysis for the attitude scale to see how the respondents perform on each item and how they then score on the instrument as a whole.

> *"The purpose for doing an item analysis is to select from a pool of items the ones that most effectively obtain the information you want, and to eliminate the less effective items from your instrument."* (Henerson, et al., 1987, p.87).

Grondlund (1976), states that when analyzing an item for effectiveness for a research instrument, if the item is found to have low quality and discrimination indices of less than 0.20 then they should be revised or dropped. After item analysis of the attitude scale three items had to be dropped from the scale. Alphas based on the final 37 items of the attitude scale was .95 for the British boys and .93 for the Kuwaiti boys. See appendix **D** for the complete attitude scale.

6.2 Validity and Reliability of the Attitude Scale:

The face validity for the scale was established by a panel of experts, in England and in Kuwait. The methods used to calculate reliability coefficients for the attitude scale toward physical activity and physical education were: test-retest and split half, in both the UK and Kuwait please see table 6.1.

The test-retest method is used to measure the stability of the instrument over time, and the split half method measure the internal consistency of the instrument.

Table 6.1 shows the results of the reliability coefficients for the two methods used for the British and Kuwaiti boys.

Table 6.1 The reliability coefficients for the attitude scale.

	Test-retest	Split half
British n=(23)	.77	.86
Kuwaiti n=(38)	.78	.84

The attitude scale was constructed in the Likert format. Each statement was scored from one to five. If the response to a statement indicated a positive attitude it was scored as five. If the response indicated a negative attitude it was scored as one. A response falling between these two extremes was rated as two, three, or four. The students final result is the sum of the point values for each statement.

6.3 The Development of the Knowledge Test:

Often in physical education the cognitive domain is neglected or totally ignored. This seems to be due to the fact that many teachers, administrators, and parents associate physical education solely with the psychomotor and health-fitness domain (Comer & Sparkes, 1992; Hastad and Lacy, 1994). In many ways knowledge will affect the way we behave. It influences the choices we make, and in many instances the way we live our lives. Knowledge testing is an intrinsic part of most subjects being taught in schools today. There is certainly no valid reason, other than it is not the norm, why physical education cannot have instruments that affect and assess the cognitive domain. This does not mean that physical education has to move to the classroom, but the quality of physical education can be improved and enhanced by using such instruments (Bedworth and Bedworth, 1992; Hastad & Lacy, 1994). The knowledge test for this programme was written to meet the objectives

set forth in section 6.9 of this chapter. The steps on how to construct a test as outlined by Clarke and Clarke, (1987), were adhered to. These are:

> *"1. The purpose of the test should be clearly in mind....To what extent do you wish to measure how well your students have learned a particular unit of study or body of material?*
>
> *2. Outline the scope of the examination, listing the important topics and the types of thought reactions to be tested. Under each topic, list the most significant items to be included.*
>
> *3. Compose test items, selecting the type of objective form best suited for each...*
>
> *4. Arrange test items in approximate order of difficulty.*
>
> *5. Give clear directions for taking the various test types.*
>
> *6. Specify the scoring procedure for each test type.*
>
> *7. Prepare scoring key.*
>
> *8. Compute the reliability of the test." (p. 58-59).*

6.4 Validity and Reliability of the Knowledge Test:

The face and content validity of the knowledge test was established by the researcher and his advisor in this project. In addition individuals within the field of education were asked to give their informed opinion of the test. According to Gay (1981),

> *"When selecting a test for a research study, the researcher assumes the role of expert and determines whether the test is content valid for his or her study. The researcher compares what will be taught in the study with what is measured by the test"* (p.112).

Using Gay's standard the validity of the test is acceptable. The test was set up in accordance with Clarke and Clarke (1987), and its' face validity and content validity

were accepted by various professionals in the field. Reliability coefficients of test-retest for the British boys was r=.65 (n= 23); for the Kuwaiti boys it was r=.86 (n=31). While the reliability of the knowledge test for the British boys is low that does not indicate that the test is invalid. The low number may represent prior exposure to the test content, in physical education, health education, or some other form of public information. The British boys may have been able to remember some of the questions from the first test. The reliability coefficient or .86 for the Kuwaiti boys is acceptable in most research work. *"For research purposes, a useful rule of thumb is that reliability should be at least .70 and preferably higher."* (Fraenkel & Wallen, 1993, p.149). Frith and Macintosh (1984) state that, *"reliability always comes second to validity."* (p. 26). Because the Kuwaiti boys would not have been exposed to the information presented in the knowledge test, the reliability coefficient of that group which was considered highly acceptable, the test was therefore accepted as reliable. For the complete knowledge test please refer to appendix **E**.

6.5 The Development of the Health-related Fitness Programme:

Approaches to the development of a physical education curriculum will vary according to the needs and abilities of the students, as well as the financial status of the physical education department. There are however some basic components fundamental to the development of any educational programme (Dignan & Carr, 1981; Wulf & Schave, 1984). These components include: purpose of curriculum; selection/ identification of the target audience; needs assessment/ problem identification; setting goals and objectives; designing a program; implementation; and evaluation. Figure 6.1 indicates the necessary components of curriculum design.

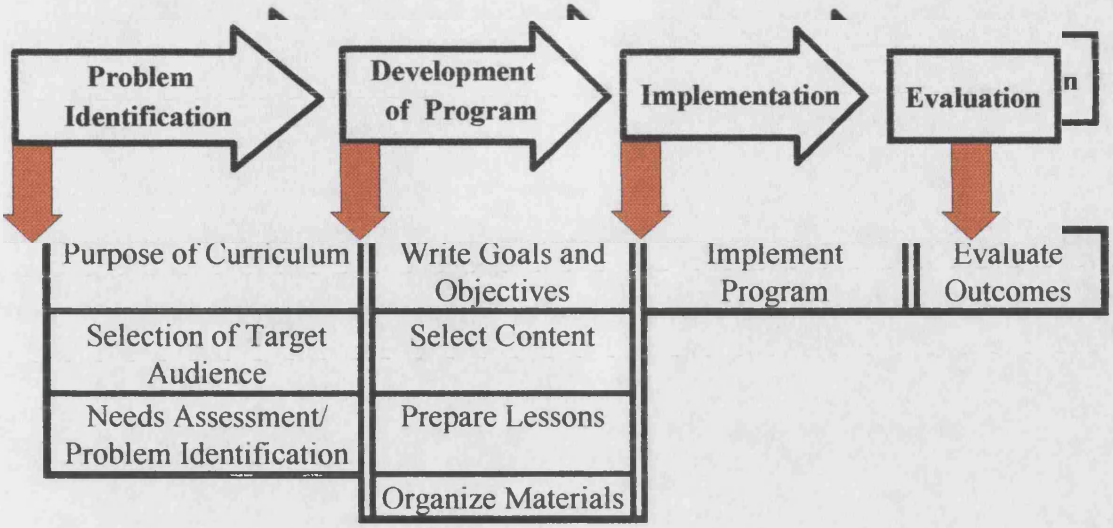


Figure 6.1 The components of curriculum design.

6.6 The Purpose of Curriculum:

This programme is based on the theory that there is a need for education and information to be incorporated within physical education curricula. I do not consider myself to be part of some "faction" of physical educators out to alter physical education to my specifications. I do however see myself as being a concerned member of the profession I have chosen, looking forward to the highest possible standard for physical education lessons. In Jones and Bate (1990), there is a very well constructed debate about health-related fitness and traditional physical education lesson. The article was very informative and quoted relevant and articulate sources on both sides. However, while I was reading I kept thinking, why are there 'sides' to this discussion? I must emphasize again that motor skills, or those skills specific to athletic success, are not in opposition to health related fitness components. The two are components of the whole student whom we are endeavoring to teach. Instead of drawing lines in the sand and daring the 'other side' to cross over, we must consider the students rights, needs, and legitimate expectations. What do we **all**, as physical educators, want our students to take with them upon graduation from secondary school? If we are only willing to teach games and their rules we are simply

producing a more knowledgeable arm-chair athlete. Is that the best we can do? Belshaw (1982) states,

> *"We spend hundreds of hours teaching team games when, in fact, the vast majority of youngsters will not actively pursue these activities once they leave school."*

What are we doing that will benefit our students? Biddle (1981) is emphatic when discussing the course physical education has taken,

> *"When 60 percent of adults feel that their childhood exercise and activities were not applicable to them as adults then it appears that some form of change is needed."*

Responses on the preliminary study revealed that the boys in both countries enjoyed physical education for a variety of reasons. The team games and sports that were offered were enjoyed by many. Preliminary study results indicated that soccer was the number one choice for the boys of both groups. This has also been found to be true in other research projects undertaken in the UK (Sports Council for Wales, 1993). Enjoyment of physical activity in youth is considered to be the first step on the road to adult physical activity (Corbin, 1986). However, for many students the simple enjoyment of activities within physical education does not necessarily carry over into adulthood. Dishman (1987), found that due to the many influences of social change, childhood enjoyment does not necessarily guarantee physical activity in adulthood. Health-related fitness programmes are still new to physical education. While it is true that at this time there is not absolute proof of a link between health-related physical education and improved adult activity levels, does that mean that there should be a barrier to the teaching of the health benefits of physical activity? Health through physical education is not a new concept,

> *"A concern for health amongst physical educators is not a novel idea, and indeed many teachers would suggest that PE has been providing pupils with a medium for health promotion for many years"* (Dowling, 1987, p. 15).

It is true that there are no guarantees that teaching health-related fitness will change the health status of the nation, but what we do know is that the current movement oriented physical education has had little success in positively affecting adult physical activity levels. While we cannot blame physical education teachers the world over for low levels of physical activity, they may be able to positively affect it. Health-related physical education cannot ensure excellent health or longevity, but it can be used to impart practical, personal health information. This information can then be a catalyst for action in adulthood. If there is nothing of academic value to be taught in physical education, if we as a profession accept that the sole purpose of physical education is to provide an opportunity for the students to play a game for an hour or two a week, then we must also accept the widely held opinion that physical education is an activity break, and physical education instructors are in reality overqualified supervisors. This is of course a nonsense. However, we must always prove our value to those we serve, it is simply a fact of life that funds are not allocated to the departments 'that everyone likes best'. In some cases funds must be shared between the athletic department and physical education, with school sports teams having priority over curriculum needs (Wilcox, 1987; Comer & Sparkes, 1992). The valuable influence of physical activity, both mentally and physically, can no longer be disputed (Brown, 1991). Therein lies the intrinsic value of physical education, health promotion through physical activity.

John W. Farquhar M.D., is a very active supporter of preventive medicine. The relationship between physical activity and health is one of his key areas of study. As a cardiologist and founder of the Stanford Heart Disease Prevention Programme at Stanford Medical School in California, Dr. Farquhar and his colleagues endorse disease prevention through health promotion. They believe that somehow society in general accepts heart attack and strokes, the leading cause of death in the UK, US, and Kuwait, as run of the mill experiences. Farquhar (1978) sets out to illustrate the 'mundane' heart attack in its true and horrendous proportions:

"...beginning January 1, two jumbo jets crash everyday of the year, killing 501 people per day (359 men, 142 women). The average age is 58, with an age range from 30 to 65. At the end of the year the total number of premature deaths from these airplane accidents is 183,000. In addition, another four jumbo jets crash daily, extensively injuring 1,562 people per crash; after six months of intensive medical care, these crash victims are restored to only one-half of their preaccident health and mobility. These nonfatal crashes involve a total of 570,000 persons by the end of the year...Had such death and disability occurred because of plane crashes, we as a nation would have restructured our priorities well before the year was out (p.20-21)."

How can anyone ignore such death and destruction? If there is anything that we as physical educators can do that could possibly avert such losses in our future generations then we should do it. How can we dismiss the teaching of the health benefits of physical activity through health related fitness in physical education simply because there are ambiguities in research? Farquhar (1978) quotes the late Donald Reid of the London School of Hygiene and Tropical Medicine, *"Don't let the best be the enemy of the good"* (p.28). Research into the cause and effect relationship between physical education curricula and measurable improvements in physical activity, health attitudes, and personal health knowledge must continue in earnest, but we must do the best with what we do know. We cannot sit back and wait for 99.9% conclusive evidence about all facets of this very complex puzzle.

I do not believe that physical education needs to be the one dimensional, games oriented subject that it is often portrayed as being. This perception of physical education is especially true in Kuwait (Behbehani, 1992). My personal experience with physical education in Kuwaiti public school, as a student and as a physical education instructor, as well as what I've seen during the implementation of the preliminary study, is that soccer equals physical education, there is nothing more to it. Theoretically there is much more to be gained from physical education than information about proper game rules. Coronary artery disease, hypertension, obesity, non-insulin-dependent diabetes, and mental health can all be improved and controlled with proper physical activity (Patrick, Sallis, long & Calfas, 1994; Powell, et al., 1987; Blair, Kohl & Paffenbarger, 1989). Doris Corbett (1995) in her

ICHPER-SD president's message emphasizes that physical education can foster, *"positive societal values"* (p.2). She also states that it is within the physical education teacher's power to, *"...emphasize values such as respect for others, responsibility, courtesy, honesty, citizenship, compassion, justice and loyalty."* (Corbett, 1995, p.2). Decades of research evidence from a variety of sources has indicated that physical activity enhances, in very real terms, individual health and quality of life (Bouchard, et al., 1994). I believe that even a minor shift in the basic physical education curriculum could have measurable positive benefits for the students. It is the purpose of this curriculum to:

- **Encourage participation in physical education by all the students.** Physical activity positively affects adult health, this can no longer be disputed. While the link between childhood activity and adult health is still equivocal there are studies that are strengthening the connection (Kuh & Cooper, 1992; Sports Council & Health Ed. Authority, 1992). Morris (1991) indicates that , *"...such a link is attractive, given the established relationship between adult exercise and adult health."*(p. 146). PE is a way to reach those students who are not encouraged to be active in the home. The fact that physical education is a compulsory curriculum subject in both England and Kuwait affords physical educators opportunity to help students establish appropriate physical activity patterns for adulthood in their youth (Harris & Elbourn, 1992; Kuwait Ministry of Ed., 1988).

- **Relate health benefits associated with physical activity in PE lessons.** The unique environment of the physical education lesson allows for a great deal of interactive conversation between students and teachers. Teachers can enjoy a physical activity with the students as well as instruct them as to the health values of that particular activity. In the future the

students are quite capable of recalling the information as well as the sense of camaraderie experienced while performing the activity. A quality physical education programme can positively effect the students future interpretation of the value of physical activity (Corbin, 1986; Kirkpatrick & Buck, 1995).

- **Raise students understanding of motor fitness and health-related fitness.**

  Students may feel less than adequate in physical education if they are not athletically inclined (Penney & Evans, 1994). We as physical educators must make students aware that we engage in physical activity as a means of having fun as well as strengthening our bodies. There are great variations in individual physical abilities. Students are not to be expected to play soccer like Ian Rush or run like Linford Christie, teachers must not allow less able students to be harassed by others. The aim of physical education is to help all students learn to keep their bodies physically fit so they can get as much out of their life as possible. Health related fitness activities are meant to enhance the quality of life. Physical activity is **for** everyone, and easily accomplished **by** everyone.

The purpose of this curriculum is consistent with the purpose of physical education in the National Curriculum as outlined by the Department for Education of England and Wales (1995). The purpose of this curriculum is also consistent with Kuwait Ministry guidelines for physical education (1988). For specific information on the physical education guidelines for England and Wales as well as Kuwait please refer to chapter three review of literature sections 3.12 and 3.13 respectively.

6.7 Selection / Identification of the Target Group:

Circumstances predetermined that the target audience of this project would be adolescent boys enrolled within the public school system in England and Kuwait. As a researcher the use of boys only was an unwanted limitation. However, there are practicalities that had to be considered when organizing this project. I was working on a school based research project. As such I had to accept the parameters of that setting. In Kuwait, unlike the UK, there is no such thing as co-education in the public school system. The inclusion of girls in the research would be optimal but, it would mean literally doing two entire projects. As the weather conditions in Kuwait could effect participation in the health-related fitness tests, I would have had to wait until the following autumn (October 1994) to work with the Kuwaiti girls. The time expenditure that this would entail would simply not be feasible in my current situation. In addition to time constraints are cultural barriers to my testing the girls. I would have to rely heavily on the female physical education instructor to carry out the majority of the tests as I would not be permitted to touch the girls. Even with the cooperation of the physical education instructor there is no guarantee that the girls themselves would be willing to participate in the intervention study under male instruction. For these reasons I worked only with the boys.

6.8 Needs Assessment / Problem Identification:

Curriculum development begins with a general assessment of need. *"The function of needs assessment is to identify and validate needs and establish priorities"* (Pratt, 1980, p.78). Pratt (1980) further states that, *"Needs assessment may examine the whole range of learner needs, or it may research one need in detail"* (p.78).

There are a variety of methods that can be used to assess needs. Pratt (1980) advises that *"off the shelf"*, ready made assessment packages may be used with great success. Materials, personnel costs, as well as time expenditure can be dramatically reduced using commercially marketed assessment packages. Interviews may also be

used. While they allow greater exploration of a problem, they are costly in terms of time, and fewer respondents can be contacted. Additionally interview data relies on the skill of the interviewer. The interview as a single tool for needs assessment usually requires specialised training. Questionnaires as a needs assessment instrument are also widely used. They can be distributed to a large population quickly and economically and resulting data is usually clear and concise. Balding (1989) states :

> *"For school staff to examine their programme of courses...reliable information on the way people feel about the programme and the school and reliable information on what the young people are doing makes a sensible base from which to plan or review their programme and policy (p. 300-301).*

In order to obtain the needed information a survey may be used. Balding (1989) discusses two survey methods, attitudinal and behavioural.

> *"**Attitudinal surveys**...raise the level of excitement and are ideally suited to provide a vigorous agenda for debate amongst staff, parents, children, governors and any combination between these groups. **Behavioural surveys**...give far more precise data than the attitudinal ones and serve to provide reliable data on which to base decisions on timing of courses in health and social education and to provide relevant content; they also provide guidance in the selection of appropriate methods to be adopted for the courses and lessons taught" (p. 300).*

For the purposes of this research the behavioural survey method was used. The preliminary survey was undertaken to assess needs and identify problem areas within the physical education curricula of the two groups. The students were asked to participate in a health-related physical fitness assessment. They were also asked to fill out a questionnaire which explored lifestyle, opinions of physical education, and personal physical activity. Results for the health-related fitness test battery were low in the UK and very low in Kuwait. These results indicated that both groups

needed to experience greater amounts of physical activities which are capable of generating higher levels of health-related fitness.

Results obtained from opinion statements contained in the preliminary study questionnaire indicated that the students in both groups held mainly positive opinions toward physical education and physical activity in general. Physical education could be good or bad, fun or boring depending on the individual, or even the circumstance. No student from either groups indicated that physical education was a necessary part of the basic curriculum. Physical education was something you were supposed to take, if you like it, good, if not, it doesn't matter. In Kuwait especially, the students liked physical education more for the fact that they could relax in class and not have to learn anything. It was nice to get out of a classroom and have fun playing a game or just talk with friends. They were not convinced of any need to learn from the physical education lesson. They were quite happy the way it was. No change was necessary.

The physical education curriculum in both countries, as set out by the mandated curriculum, was movement oriented. In the UK the students were exposed to a wide variety of physical activities and were given rudimentary information on health-fitness components. In Kuwait the while the mandated curriculum is broadly based in various types of team games, the actual curriculum implemented was limited. The researcher observed that during most of the physical education lesson, the majority of the students participated in soccer only, there was no instruction of any sort. The disparity of the physical education lessons of the two groups was monumental. The Kuwaiti students may call the lesson physical education, but it hardly fits the description. The UK boys were students in an educational environment when they went to physical education. Due to the nature of physical education there was less formality and a bit more chatter than there would be in a purely academic lesson, however there was structure and integrity to the UK lesson. Physical education in the UK never deteriorated into the free for all, play time without instruction or supervision which was prevalent in Kuwait.

Therefore the primary needs as assessed through the AAHPERD Health-related Fitness Test battery and the Lifestyle, Physical Activity, and Physical Education Questionnaire are as follows:

- Regarding information obtained from health-related fitness tests:

The physical fitness test results were not as high as could be expected from students the age of those who participated in the study. It is generally assumed that children are very active and in good physical condition. While it is true for some children, it is obvious from the test results that it is not the case for all. Indeed the past decades have brought social trends which have moved us all toward a more closed, inactive society. News reports often reflect the greater dangers prevalent today and the vulnerability of children outside of their home. This sense of imminent danger has led to less freedom for children which has led them to a more sedentary lifestyle. With less and less social avenues for play, children's potential for physical activity and fitness are deteriorating. It is essential for physical education to supply children with a range of activities which will encourage proper growth and strengthen musculature. Physical education can make a positive impact upon poor fitness levels. While it cannot change social structure it can be used to inform students of their physical needs and induce appropriate engagement in extra physical activities whenever possible. Results of the fitness tests indicate that the students need specific exercise to promote health fitness. While these exercises can be incorporated in a variety of games it is essential that they are consciously included in the curriculum. In addition, specific health-related exercises must be done consistently, throughout the school year. It is not enough to incorporate activities that promote abdominal strength, or cardiovascular fitness for four lesson periods a year and then move on to something else for the remainder of the year. It could also be of benefit for the boys to have information on body composition and proper weight maintenance. The results of the skinfold measurements indicated that quite a few boys had higher than desirable percentages of body fat. It is imperative to

steadfastly emphasise throughout the physical education curriculum the students need for appropriate activity, as well as fun.

- Regarding information obtained from the questionnaire:

It appears that the students participate in a variety of physical activities, however the majority of the students, in the UK and Kuwait rely on team games for their activity. There could be benefit for these boys to have a greater understanding of the options that are available, and the physical benefits which can be derived from different forms of activities. The boys are of an age which allows them to comprehend ideas which deal with future needs and benefits. This objective is consistent with the end of Key Stage 4 recommendation for physical education by the Department for Education in England and Wales (1995) which states:

> *"...They (students) regularly participate in health-promoting physical activity, and show an understanding of the principles used to prepare and monitor an exercise programme for a healthy lifestyle."* (p. 11).

The students need to be directly and consistently taught/informed, that physical activity is necessary and needs to be maintained throughout the lifetime. Issues such as the quality of life rather than longevity should be emphasised. Independence in old age rather than care, is another possible point of discussion. The preliminary study results suggest that students need to be encouraged to be more active. Daily habitual activity was quite low, one half of the British boys and nearly three quarters of the Kuwaiti boys had a ride to school rather than walking, even though the great majority of boys in both countries lived less than one mile from school. Encouraging higher levels of habitual activity would be an excellent way to raise fitness levels and maintain proper body composition without setting out time to exercise.

6.9 Goals and Objectives:

Goals and objectives are similar but not interchangeable. Goals specify the general intent of the programme; objectives are specific, they identify accomplishments within a given frame; who will do what, by when, to what extent, how (Mager, 1964). *"Objectives are specific learning outcomes as a result of classroom instruction."* (Wulf & Schave, 1984, p.37).

The objectives of this curriculum were derived from the needs identified in the preliminary study through the use of the health-related fitness tests and the lifestyle, physical activity and physical education questionnaire please refer to section 6.8 of this chapter. Information on how to address these curriculum objectives has been derived from a variety of sources. The literature regarding health-related physical fitness emphasizes the need for individuals to understand the components of health-related fitness (Biddle, 1987; Pate, 1983; Plowman & Falls, 1980). There is a need for the students in both groups to understand that there is a difference in emphasis between motor fitness activities and health-related fitness activities, and that health-related fitness activities are not necessarily sport or skill related. It is also important that the individual pupil is capable of assessing his own status and quantify his physical activity. In this manner he is able to continue a programme of appropriate physical activity when he is no longer within the structured environment of physical education. The objectives of this programme are as follows:

1. The students will know the difference between health-related and motor fitness.
2. The students will be able to define the four components of health-related fitness.
3. The students will be able to state different activities which will enhance health-related components.
4. The students will be able to define the three principles of exercise: intensity, duration, and frequency.

5. The students will know the safety rules regarding various types of exercise.
6. The students will be able to calculate their target heart rate and be able to work at different target heart rates.
7. The students will be able to list physiological changes that occur when there is improvement of the health-related fitness components.
8. Students will be able to show an improvement in their health-related fitness levels.

The goals of this programme are set forth in much broader terms. It is becoming more widely accepted that schools are responsible for the whole student, not only the intellectual aspect of the student (Corbett, 1995). Students, as Pratt (1980) acknowledges, are under orders to attend school, whilst this is for their benefit, it places a tremendous responsibility on the schools and teachers. We have no right to waste, with mediocre instruction, the precious formative years that children spend in school. This is especially true of physical education instruction, where many programmes are so sports and games oriented that many students are not adequately physically educated (Belshaw, 1982; Biddle, 1981; Blair, Mulder & Kohl, 1987). Pupils attend physical education but are not educated. In physical education we have an opportunity to truly, positively, effect the society in which we live, promoting health through physical activity is only one step. O'Donnell, (1987) states that, *"Health promotion is the science and art of helping people change their lifestyle to move toward a state of optimal health."* (p. 4). Health promotion through increased physical activity has been proven to be successful and, it is well within the realm of physical education to provide information for positive action. It is therefore, with the present and future needs of the students in mind that I set forward the goals of this programme:

- Students should be able to demonstrate an across the board improvement in health related physical fitness test components at the end of the programme.

- There should be improvement in the student's knowledge concerning such things as health risk behaviours and the various benefits of regular physical activity.

- The programme would encourage the students to take an active interest in, and responsibility for their personal fitness and health.

- Students should be able to understand the correlation between physical activity and health and their role in proper health maintenance.

- Physical education would become a course with a true emphasis on PHYSICAL and EDUCATIONAL ASPECTS.

6.10 Designing a Programme:

With the needs, goals, and objectives, of this project in mind it was time to construct a curriculum to address them. Health promotion through instruction in physical education would be the emphasis of the curriculum. Health promotion is a new and constantly changing field. It includes a wide variety of disciplines; one recent compilation of a partial list included 39 different fields (O'Donnell, 1987). It would be difficult for an individual researcher to have such diverse knowledge and expertise, it is therefore recommended that whenever possible to use a previously developed intervention known to achieve your objective(s) if properly implemented, or a modification of such a programme (Kumpfer & Turner, 1991). Childhood interventions are meant to promote behaviours which, if continued into adulthood,

will reduce the risk of cardio-vascular disease (Parcel, Simons-Morton, O'Hara, Baronowski, Kolbe & Bee, 1987).

While scrutinizing the various programmes available the intended research group must always be kept in mind. Health needs of all human beings may be basically the same, but culture and resources can vary significantly. The project would include only material to be taught in the physical education lesson. There are many programs which include alteration to the diet by providing a specially prepared school lunch with restricted sodium, a lower overall fat and cholesterol content, and a large percentage of fresh vegetables and fruits (Parcel et al., 1987). This could be implemented in the UK as the majority of British students eat lunch at school. Kuwaiti students do not take lunch at school. The school day runs from 8:00am to 1:30pm at which time the students are dismissed from school for the day. Altering the diet of one research group and not the other could produce misleading results, therefore a programme based on the alteration of the school lunch could not be used. There are also programmes which promote aerobic exercise by using rock and roll music to illicit a dance like aerobic lesson. Again while this fits in culturally with the UK there would be stiff resistance in Kuwait. An aerobics programme itself would be unusual but not unwelcome as it strengthens the body and has inherent benefits for the individual, to do it to the beat of 'Madonna' is quite another matter. A way to sidestep the music issue would be to use a metronome or a pre-recorded beat for the Kuwaiti students and pre-recorded music for the British students, thereby providing a culturally acceptable beat for each group to follow.

Assessment data from the preliminary study indicated a difference in the fitness levels between the British and Kuwaiti students; there was also a variation of ability between the individuals of each group, refer to chapter five section 16 for complete test results. The programme will have to try and avoid competition which could discourage the less fit student. Yet it must be challenging enough to keep the interest of the more fit students. A logical way to accomplish this would be to involve the students in self-assessment using individual assessment sheets.

Assessment undertaken in this manner frees the instructor from various aspects of paperwork and allows him to be more involved in the educational process. It also encourages independent action on the part of the students, hopefully boosting confidence and responsibility.

There are several effective programmes that would meet our previously stated student needs, and curriculum goals and objectives. Programmes which encourage individual participation and responsibility as well as promote physical activity without competition. The three programmes which we will use in combination will include; "Physical Education Outcomes Project" (NASPE, 1990), "Feelin' Good" (Feelin' Good Manual, 1990) fitness for junior high schoolers; and "Physical Best" (Physical Best Manual, 1989).

"Physical Education Outcomes" outline, *"What should students know and be able to do?"* (NASPE, 1990). Outcomes provide teachers with the definition of the *"Physically Educated Person"* and identifies *"Benchmarks"* or reference points of physical development for each year of physical education instruction (NASPE, 1990). This programme allows for a significant variety of teaching methods and curricula and various levels of skill exhibited by the students. Instructors need only to compare student performance with the recommended reference points for that particular year. The emphasis of outcomes is individuality in both the students and the instructors.

"Feelin' Good" provides work-out guidelines for students aged 13 to 16 years of age. The routines serve as the means of improving major components of fitness, developing selected athletic skills, and making fitness fun (Feelin' Good Manual, 1990). There are 12 work-outs which increase intensity, duration, and total amount of work over 12 weeks of time. All the work-outs are based on the information and experience gained from the following accredited programmes:

1. The YMCA-Fitness Finders program conducted during 1971-75 in hundreds of YMCA's in the USA and Canada.

2. The Feelin' Good program field-tested in public schools in San Diego, CA; Vancouver and Yelm, WA; and Emmaus PA, 1971-74.
3. The Feelin' Good program as used by more than 500,000 children during the years 1976-83.

The routines are designed to help class participants improve cardiovascular endurance, muscle endurance and strength, flexibility, body composition , and weight control (Feelin' Good Manual, 1990). The fundamental objective is to keep all participants in continuous motion for a prescribed period. Feet are to be kept moving at all times, including the instructors'. This is a very important aspect as research indicates that without the participation and acceptance of the value of the programme by the physical education instructor, students will assume the program has little value and there will be only a minimal amount of programme success (McKenzie, 1988; Parcel, Simons-Morton, O'Hara, Baronowski & Wilson, 1989; Simpson & Pruitt, 1989; Wentzell, 1992). The teachers' participation lends credibility to the programme.

> *"It is not enough to proclaim the values and outcomes of physical activity; we must also serve as positive role models and accept responsibility for living a healthy, fit lifestyle so that others are positively influenced to adopt the health habits we display." (Corbett, 1990, p. 2).*

The 'Physical Best' project is an educational programme which includes assessment techniques, programme activities and a recognition system designed to motivate students to participate in programme activities (AAHPERD Physical Best Manual, 1989). Physical Best promotes health related physical fitness by providing students with opportunities to improve aerobic endurance, body composition, flexibility and muscular strength, and endurance (AAHPERD Physical Best Manual, 1989). There is an intent to provide students with opportunities to do more than simply improve their physical fitness temporarily. Students are helped to gain the

knowledge, skills, and understanding necessary to assume responsibility for their fitness throughout their lives (AAHPERD Physical Best Manual, 1989).

6.11 Implementation:

Before the actual implementation of the intervention study students in both countries filled out consent forms, the same procedures as the Preliminary Study. The programme was implemented from the 4th of February 1993 to the 21st of July 1993 at one secondary school in the county of Avon, UK. The boys who participated in this study were between the ages of 15 and 16 years. The average age for the British boys was 15.32 years with a standard deviation of .47; the Kuwaiti boys average age was 15.20 years with a standard deviation of .40. The average height for the British boys was 169.71cm with a standard deviation of 8.64; the Kuwaiti boys average height was 162.82 cm with a standard deviation of 7.09. The average weight of the British boys was 55.32 Kg with a standard deviation of 8.26; the Kuwaiti boys average weight was 62.86 Kg with a standard deviation of 22.06 Kg. One year 10 physical education class with approximately 40 students in the UK agreed to participate. The researcher and the regular physical education teacher worked together to insure the proper implementation of the curriculum and the associated tests. The children were always under the supervision of their regular teacher. The programme was implemented from the 10th of October 1993 to the 8th of January 1994 in one secondary school in Kuwait. A group of boys in Kuwait of approximately 50 boys from a secondary school in Kuwait took part. In Kuwait the regular teacher was available to assist the researcher with the tests associated with the study, however he did not assist with the curriculum and the researcher was considered to be in charge of the physical education lesson for the duration of the study.

6.12 Evaluation:

The programme was evaluated through the use of various instruments pre-test and post-test. Pre-tests and post-tests according to Terhune (1986), are not only an evaluation instrument but an instructional tool as well. Pre-tests are often recommended in order to:

- *Help students see the emphasis of the unit.*
- *Help students identify content and skills they know.*
- *Help students become aware of the performance standards required.*
- *Motivate students to pay attention during instruction to important points stressed on the tests.*
- *Help teachers identify student needs so that emphasis can be placed on various components within the unit (p. 6).*

Teachers can make use of a post-test to:

- *Help students see their growth between pre-test and post-test.*
- *Help students determine needs for further growth.*
- *Help students develop self-concept as a result of their own efforts to learn the material.*
- *Provide information to judge success of a unit*
- *Provide information for reporting (p. 6).*

Post-tests can be returned to students in order to help them assess their own progress. Pre-test evaluation consisted of: a questionnaire regarding individual lifestyle and physical activity; a knowledge test; an attitude scale; and a health-related fitness test. The post-test evaluation paralleled the pre-test. In addition to the pre-test instruments the post-test evaluation included tape recorded individual interviews with students and teachers in the UK and Kuwait using a structured schedule.

6.13 Introduction to the Intervention Study:

After the results of the assessment tests of the preliminary study were analyzed the components of the intervention study were developed. The intervention study

consisted of four parts. First was the pre-test administration of the lifestyle questionnaires, knowledge test, attitude scale, and health-related fitness test battery; second the health-related physical education program; third the post-test administration of the previously mentioned test instruments; fourth and lastly, at the conclusion of the project individual interviews with selected students and all teachers associated with the research in both sites were conducted.

6.14 The Pre-test:

As this research was trying to understand the individual needs within physical education it was necessary to have adequate indicators of each student's current status, both physical and academic. The instruments developed after analyzing the results of the preliminary study were used at this point.

Pre-test administration of the questionnaire, attitude scale, and knowledge test was completed in one lesson period in Britain, involving 41 students. The tests were completed in one lesson period in Kuwait, involving 51 students.

The health-related fitness test was administered in one lesson period in Britain: 36 boys participated in the one mile walk/run; 37 boys participated in the sit-and-reach, timed sit-ups, and subscapular skinfold measurements. The health-related fitness test was administered during two lesson periods in Kuwait, the need for two periods was due to shorter lesson periods and more participants in Kuwait. Thirty-two boys participated in the one mile walk/run, 50 in the sit-and-reach and the timed sit-ups, and 49 in the subscapular skinfold measurements. The results of these tests were calculated and given to the students. In this manner the students could keep track of their own progress.

6.15 Programme Implementation:

The health-related fitness programme was undertaken after the pre-test assessments. The study programme consisted of seven modules related to physical activity and its influence on health. The modules were a variety of lengths. Some were completed in one unit while others took four units to complete, please refer to appendix **F** for the entire programme. The students were to keep their own records and strive for personal betterment.

6.16 The Post-test:

The last unit of the programme was the post-test assessments. The questionnaire, attitude scale, knowledge test, and the health-related physical fitness tests were again administered by the researcher. In Britain, the questionnaire, attitude scale, and knowledge test were administered in one day to 31, 34, and 34 boys, respectively. The health-related fitness tests took one day to complete, 31 boys took part in the four test components.

In Kuwait 56 boys completed the questionnaire, attitude scale, and knowledge test in one lesson period. The health-related fitness tests took two lesson periods to complete; 43 boys participated in the one mile walk/run; 56 boys completed the sit-and-reach, timed sit-ups, and subscapular skinfold measurements. The results of the two groups post-test data was compared to data obtained in the pre-test administration of the same tests, please refer to part (II) of this chapter.

In addition to these data individual interviews were conducted with the students and teachers in both countries. The individual's opinions about physical education and physical activity, as well as their opinions about the pros and cons of the programme were investigated.

6.17 Individual Interviews:

There are four types of research interviews; the structured interview; the unstructured interview; the non-directive interview; and the focused interview (Cohen & Manion, 1994). The structured personal interview was used for this research. The question content, sequence and wording was the same for all respondents. Using this type of interview method there was less chance of dramatic differences of information obtained from both groups. Both students and teachers were tape recorded by the researcher. The interview was considered an essential instrument in this study. Fraenkel and Wallen (1993) refer to Fetterman (1989) who described interviewing as, *"the most important data collection technique a qualitative researcher possesses"* (p. 385). Further Frankel and Wallen (1993) say,

> *"We interview people to find out from them those things we cannot directly observe. The issue is not whether observational data is more desirable, valid , or meaningful than self-report data. The fact of the matter is that we cannot observe everything. We cannot observe feelings, thoughts, and intentions...We have to ask people about those things." (p. 385).*

For the interview questions refer to appendix **G**. Students were selected by test result scores; boys from both ends of the spectrum, i.e., significant improvement/high test scores and insignificant improvement/low test scores, were chosen to express their views on the programme and physical education and physical activity in general. In Britain 14 boys were asked to take part in the interviews. A time table was arranged and the students were excused from their regularly scheduled lesson. In Kuwait 27 students took part in the interviews. Three British teachers and two Kuwaiti teachers also took part in the interviews. Miles and Huberman (1994) guidelines for qualitative analysis were used to help the researcher draw meaning from the interview data..

6.18 Data Analysis:

Data is presented in graphical representation; frequency; percentage; percentile ranking; mean; mode; standard deviation; maximum; minimum. The researcher acknowledges that as revealed in the preliminary study, the two groups participating in this study were different. The t-test was used as a means of assessing the differences of the two groups, as well as pre-test and post-test result differences. The t-test is considered a robust test and is able to tolerate some violations of its assumptions regarding the composition of the two groups. Witte (1989) indicates that t assumes normal populations and equal distribution of variance, however he further states that, *"You needn't be too concerned about violations of these assumptions, particularly if both sample sizes are equal and each is fairly large (greater than about 10)." (p. 269).*

Additionally SPSS for Windows was used to generate box plot sketches of the data. According to the SPSS for Windows Base System User's Guide (1992),

> *"Instead of plotting the actual values, a boxplot displays summary statistics for the distribution. It plots the median, the 25th percentile, the 75th percentile, and values that are far removed from the rest." (p.177).*

Figure 6.2 illustrates a sketch of a boxplot. The lower boundary of the box is the 25th percentile and the upper boundary is the 75th percentile. The horizontal line inside the box represents the median. Fifty percent of the cases have values within the box. The length of the box corresponds to the interquartile range, which is the difference between the 75th and 25th percentiles. The boxplot includes two categories of cases with outlying values. Cases with values that are more than three box lengths from the upper or lower edge of the box are called extreme values. On the boxplot, these are designated with an asterisk (*). Cases with the values that are between 1.5 and three box-lengths from the upper or lower edge of the box are called outliers and are designated with a circle. The largest and smallest observed values that aren't outliers are also shown. Lines are drawn from the ends of the box to these

values. These lines are sometimes called whiskers and the plot is called a box-and-whiskers plot (SPSS, 1992).

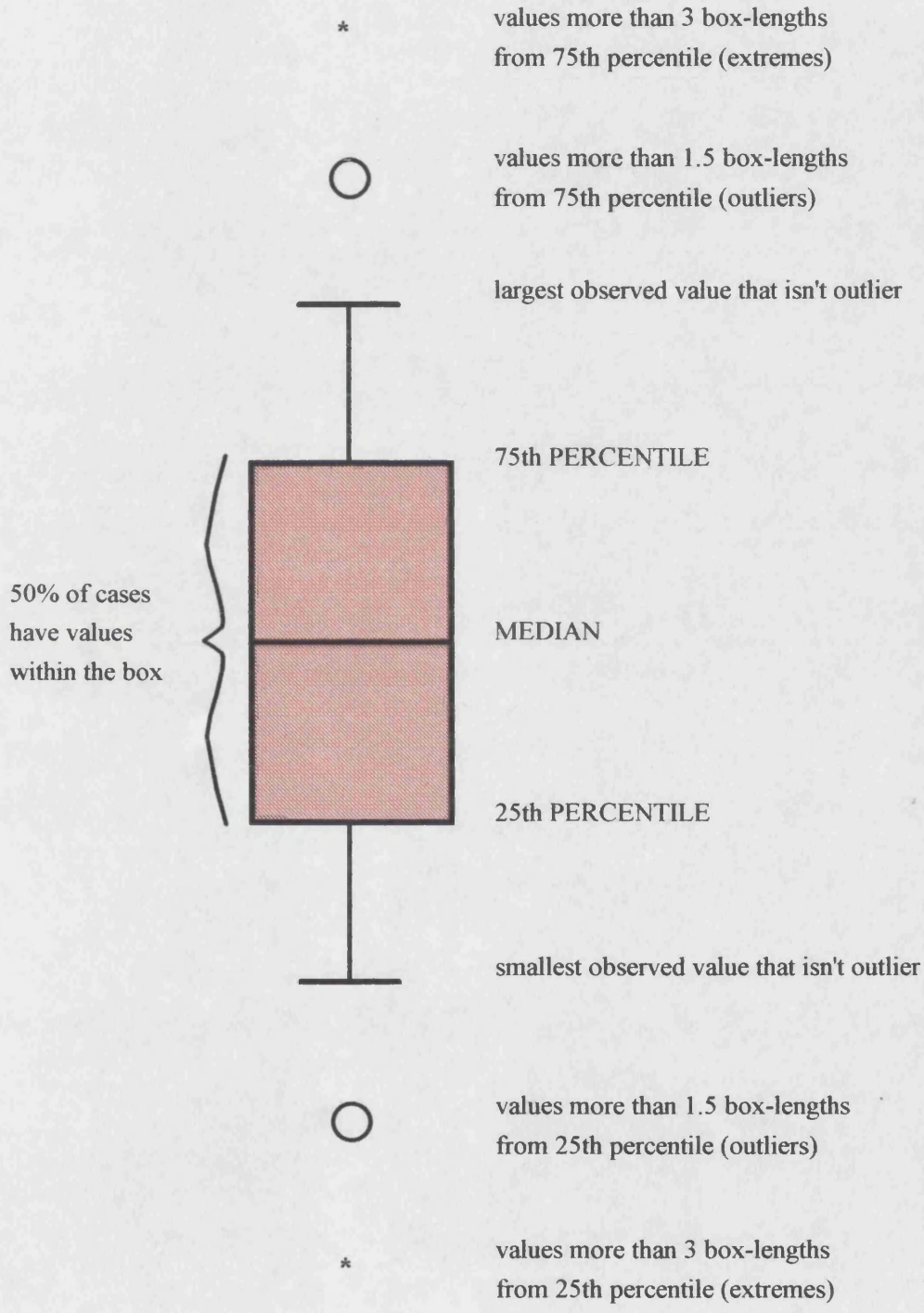


Figure 6.2 Illustrates a sketch of a boxplot.

6.19 Limitations to the Intervention Study:

In addition to the limitations discussed in chapter five, section six, 'Limitations of the Preliminary Study, the attitude of the schools' administrator as a possible limitation cannot be overemphasized. It has been proven in numerous studies that without the full support and cooperation of those in authority there is very little chance of a successful outcome to the programme (McKenzie J., 1988; Simpson G. & Pruitt B., 1989; Wentzell, S., 1992). The teachers' attitude will also play a vital role in the success or failure of a project. Students are influenced by the way in which a teacher presents lesson material, if the instructor is unmotivated and a rather poor role model regarding physical fitness, there is less of a chance for success (Corbett, 1990).

There are variations regarding physical education lesson time that must also be considered. The Kuwaiti students attended physical education twice a week for 45 minutes per lesson in the 1993 school year. However, lessons scheduled three times a week is generally considered to be the minimum number of physically active periods per week from which to gain health-related benefits (Armstrong, 1989). The Kuwaiti students may have had insufficient lesson time to show physical improvement, however cognitive progress could be made. There was an overall *'laissez-faire'* attitude in Kuwait, students were unaccustomed to having an active physical education teacher and didn't like it. For more information refer to discussion in chapter six, section 29. This project was a drastic change from the students previous years of experience with physical education, there was great resistance on the part of many students to the change.

The British children involved in this project received physical education once a week, having a one hour lesson one week and a two hour lesson the alternating week. This too may have an effect on the results of the physical fitness tests. On several occasions, rainy days resulted in more than 60 students in the gymnasium at one time, severely limiting instruction and activity. Additionally, the British physical education lesson was, on several occasions cancelled for other 'more important' school activities, this led to a loss of rapport between the researcher and

students. We seemed to be constantly getting to know each other. The British semester breaks also affected the continuity of the program. The time lost due to lesson cancellations and breaks caused the doubling up of information units, this could effect the test results as well as influence attitude toward the programme. It took from the 4th of February 1993 until the 21st of July 1993 to complete the programme, five and one half months, and this was with the complete assistance of the regular physical education instructor. In Kuwait it took from the 10th of October to the 8th of January, just short of three months, to complete the same programme with more students, and no assistance from the regular physical education instructor.

Part (II)

6.20 Results of the Intervention Study for the British and Kuwaiti Boys:

This part of the chapter examines the implementation of the intervention study which was comprised of the following:

- Lifestyle, Physical Activity and Physical Education Questionnaire
- Knowledge Test
- Attitude Scale
- Health-related Curriculum
- Personal Structured Interviews with Students and Teachers

Results and interpretations of the pre-test and post-test administrations of the aforementioned test instruments will be presented nationality. A contrast of the individual interviews of both students and teachers is also presented.

The pre-test and post-test administrations of the written tests were conducted in the gymnasium of each school. The health-related fitness test were conducted on playing fields adjacent to each of the schools. The health-related curriculum was

undertaken in the regular physical education setting, using the gymnasium and playing field, during the students' regularly scheduled physical education lesson time.

The boys who participated in this study were between the ages of 15 and 16 years. One year 10 physical education class with (n = 40 approx.) students from school in Bristol, Avon County, UK, agreed to take part. The study was conducted in the UK from February 4, 1993 until July 21, 1993. A similar group of boys in Kuwait, (n = 50 approx.) from one school in Kuwait, took part in this study from October 10, 1993 until January 8, 1994.

6.21 British and Kuwaiti Boys' Physical Activity and Lifestyle Survey Results:

The following results will be from the pre-test and post-test administration of the health and physical activity questionnaire. The questionnaire addressed the physical education lesson, student physical activity levels, health and safety habits, and students opinions of physical education and physical activity in general.

6.21.1 Physical Education Lessons:

The British boys had one physical education lesson per week. The duration of the lesson alternated from one hour the first week to two hours the second week. Kuwaiti boys had physical education lesson twice a week and the duration of the lessons was 45 minutes for each period. The preliminary study results for the Kuwaiti boys indicated they had physical education once a week for 45 minutes. This was due to the fact that the 1991/1992 school year was the first after the Gulf War. Actual physical activity time was considerably shorter for both groups. On average the British needed 15 minutes, and the Kuwaiti needed 12 minutes at the beginning of each lesson for changing their clothes and the taking of the register; in addition a further ten minutes for the British group and five minutes for the Kuwaiti

group at the end of the lesson was allotted so the students could wash and change their clothes.

6.21.2 Amount of Physical Education Time:

The British and Kuwaiti boys participated in the same amount of physical education fortnightly. There was a difference in the amount of time each group was allotted physical education weekly. The British boys had physical education 60 minutes one week and 120 minutes the alternate week, a total of 180 minutes in a two week period. The Kuwaiti boys had two 45 minute physical education lessons per week, 180 minutes in total for a two week period. This data indicates that in both Britain and Kuwait the literature indicating that maximal health benefits are gained through physical activities of appropriate intensity of 60% to 80% of maximal capacity, duration of at least 20 to 30 minutes per session, and frequency of at least three times a week, was not considered when scheduling the physical education lesson. Neither of the lessons would fit into the time frame indicated in the definition of appropriate physical activity (Fox & Corbin, 1987; Sallis and Patrick, 1994). Also it must be remembered that this is curriculum time, not activity time. Time within the physical education lesson period is used for many things. The students need to change their clothes before and after instruction, the roll is taken and the lesson content must be discussed before any activity can be started. Michaud and Andres (1990) suggest that 'on task' activity time within physical activity is approximately 25% of actual lesson time. If that percentage is true for these two groups it is unlikely that there is enough physical activity time within these lessons to yield many health benefits for the students. While this is sadly in keeping with the position that physical activity seems to warrant in Kuwait it does seem to send mixed messages in the UK. British students hear from a variety of sources how important it is to be physically active and yet their physical education time is curtailed to such an extent to rend it unable to effect a positive change in the individual. With constant

reorganization within the educational systems both in the UK and Kuwait, there is not likely to be a dramatic increase in physical education lesson time in the near future. Physical education is perceived as being totally for fun and not a real educational lesson (Rink, 1992; Siedentop, 1992). While doing their best to dispel this misconception, physical education teachers will have to lobby for more physical education time within the curriculum, as well as emphasise through personal actions the valuable contribution physical education makes to the individual. In addition, if the actual intent of physical education is to impart information and encourage physical activity in the students the physical education lesson can not be considered the only instance of physical activity in the students life. It is up to the physical education instructor to instill desire and understanding of the need to be physically active. In the same manner the teachers of mathematics, English, or science do not expect their lesson period to be the only time the student comes into contact with the subject, so too with physical education. It might not show maximum effect during the teen years when there are so many other enticements, when the perceived benefits of physical activity are outweighed by the effort needed to participate (Fox, 1994). Yet, it is essential for physical education to sow that crucial seed of information, that the costs (effort) of physical activity is minimal in comparison with the possible benefits.

6.21.3 The Nature of the Physical Education Lesson:

While the amount of physical education time allotted to each group was the same, the structure and integrity of the two lessons were poles apart. There was a vast difference in the course content of the two groups. The British group benefited from a varied course of physical education throughout all their years in school. The expectations of the physical education lesson in the UK are: learning, continuity, progression, opportunities for achievement, and assessment. The core activities within the physical education programme are: athletics, games, gymnastics, outdoor

activities, swimming, and dance. Each area receives varied emphasis throughout the years as the students mature, progressing on to the next level of new physical activity and experience within physical education.

The Kuwaiti boys were not as fortunate as their British counterparts. The Ministry of Education's physical education guidelines for primary, elementary and the first two years of secondary school are exactly the same: two lessons per week; one half of the year dedicated to soccer, basketball, track and gymnastics; the second half of the year dedicated to volleyball, handball, track, and gymnastics. Years three and four in secondary education have only one 45 minute physical education lesson per week. There is no progression of learning and no opportunities for new activities within the lesson. Even though limited in comparison to the UK physical education programme, it could be argued that the Kuwaiti boys could get some benefit from the curriculum outlined by the Ministry of Education. Games, athletics, and gymnastics provide students with opportunities to enhance strength, cardiovascular endurance, body movement and control, as well as flexibility. However, for the study group this already limited curriculum was further reduced to include only volleyball or soccer. The boys were expected to play soccer outside or volleyball in the gymnasium. Those who did not excel at the games simply had no physical education. They stood around watching and chatting, some were studying for other lessons. This was a major problem in Kuwait. In addition there was no supervision, let alone instruction in the physical education lesson. The Kuwaiti teacher was not visible during the PE lesson, the boys were left on their own to get on with it. Students in Kuwait will never learn that there is something to be gained from physical education if they are not properly educated. It is not enough for the Education Authority to set out highly laudable and in-depth goals and objectives for physical education if they are not going to be implemented. The most advanced curriculum will not do one thing if it is not taught to the students. It is very true that teachers are not independent within the educational system, and it would be incredibly unfair to tritely say that if the teacher is enthusiastic all will be well and the students will be stunning successes. Teachers,

curriculum, administration, facilities, finances, students and parents are all inextricably linked in the circle of education. Not surprisingly any problem within such a complex system is difficult to address to the satisfaction of all concerned. Constant circulation of ideas and discussion between all parties must be maintained or the educational process will not run efficiently.

6.21.4 Physical Education Teacher Qualifications:

In Britain, two of the three teachers working with the research group were not qualified as physical education specialists. The one qualified physical education teacher involved with the research group was the head of the physical education department, he was certified in physical education and also human biology. Of the two non-specialist teachers one was certified in English and math and the other was certified in math and computer science. They were requested to help with the physical education class because they were free during that period and they enjoyed sports, neither teacher had training in the fundamentals of exercise physiology. Because of budget considerations it has become common throughout the country for physical education to be taught by non-specific physical education teachers (Secondary Heads Association, 1991). This again reinforces the prevailing notion that physical education is just about sports and that anyone who likes a game of soccer or rounders can teach it (Pate, 1983).

In Kuwait physical education lessons from elementary to university level must be taught by a certified physical education teacher. The reason for this regulation is that by its very nature physical education could result in injury if improperly directed. Children could be injured if an activity is incorrectly demonstrated or supervised. Both the Kuwaiti teachers at the school which participated in this study had their Bachelor of Science degree in physical education.

6.21.5 Physical Education in the UK:

Physical education in the UK was definitely a part of the curriculum, the British teachers were always in charge of the class. They respected the subject they taught. They had something they thought was worth teaching. The students treated physical education as a genuine lesson as well, it was not a free period or study hall. Non-participation in the physical education lesson was an infringement of school rules of conduct in the same way it would be in any other lesson. It was not accepted by the teacher.

6.21.6 Physical Education in Kuwait:

One might assume that if a person puts in the effort to receive a higher degree in a particular field that he/she would be more dedicated to his/her profession than another individual who has a simple interest in the subject. What I found in the study of these two groups was actually the opposite. The two certified physical education teachers in Kuwait were supervisors at most. The teacher took the register, the proper physical education kit and shoes were requested with a warning of disciplinary measures for non-compliance. Several students decided to face whatever might come and simply refused to dress for the lesson. Generally there were no adverse consequences for non-participation. The teacher stated that on occasion he would send a boy to the headmaster for not wearing his proper kit, but he usually didn't do anything so long as he didn't bother others. After register the teacher threw a ball to the students to play with and returned to his office. The teacher gave no instruction or supervision for these lessons. He appeared at the end of the period to collect the ball and dismiss the students. The students played only 'street' soccer, very rough and barefoot. The majority of the students were chatting amongst themselves while some studied for other lessons. During an interview one boy said that this lack of dedication on the part of the teacher was the reason that he

saw no need to participate in physical education. *"If the teacher doesn't care neither do I".*

The head of the Kuwaiti physical education department graduated from university in 1968, the other physical education instructor also graduated in 1968. Neither of these two teachers has taken any type of teaching course post graduation. They stated that they did not see a need for further education in physical education. It was their opinion that the students did not like being told what to do and physical education should be nice for the kids. Both teachers were employed after school hours. One was involved in a private business while the other was employed at a sports club. The teacher who works at the sports club has taken courses in refereeing to assist him at his out of school employment. It is very important he said to keep up with the standards expected in international refereeing. The attitude that refereeing was so important that further courses were essential, but that teaching required no further education was astonishing. Being a teacher of physical education seemed to be a side line during the day while he waited for his real job in the evening. Without an in-depth study of the teachers opinions of physical education it would be impossible to say when or how they had formed this opinion. During interviews they both simply expressed that everyone was happy with the situation. While I do not believe that the teachers evening employment should be regulated it does show that in private employment this man was more than willing to study and attend courses to be better at his job, he was not willing, or thought it unnecessary to give this extra effort for physical education. This again reinforces the general opinion in Kuwait that the value of the public recognition associated with national teams games far outweighs the seemingly insignificant individual activity in physical education. Physical education is a break time of little importance to those that are not athletically inclined. Sports clubs offer an opportunity to be publicly acknowledged and accepted as a 'success'. Physical education teachers in Kuwait could benefit from the 'in-service' days and various course studies that are so prevalent in England. There have been many significant changes within the field of

physical education in just the past five years. I myself, doing active research in this area at this time, find it difficult to keep up with the shifts in the direction of physical education curriculum. How then for the teacher who has done no learning in this field for more than 25 years? Additionally, these men by virtue of their years experience in physical education are promoted to heads of department and physical education inspectors. They are then able to perpetuate their opinions about the value of physical education and the system of 'non-teaching' upon future physical education teachers. When we at the College of Applied Education in Kuwait started to emphasize the health-related aspects of physical education for our future teachers there was much resistance by teachers already in the field. Students would return from a practicum teaching course and report that the regular teacher and the physical education inspector who was overseeing the student teacher refused to let anything other than games be taught. Student teachers were told that the pupils wouldn't like health related physical activities and it really was not necessary to teach it. Physical education should be a nice and relaxing time for the students. Without the support from administrators the new teachers will be unable to initiate changes in the curriculum. These new teachers will be goal-less and could easily become disillusioned with their profession and just follow the example of their predecessor and simply not bother themselves teaching. The cycle seems to be never-ending. It will take much effort on the part of interested parties to initiate public awareness of the need for, and the potential influence of physical education. Without public, and especially parental interest, physical education in Kuwait could very easily remain as it is or sadly, deteriorate further.

In Kuwait even the name of physical education reflects what could be considered public opinion. While the Arabic term for physical education is (التربية الرياضية) ***terbiya riathiya*** the common term is (العاب) ***Ala'ab*** play/games. This terminology reinforces the attitude which was voiced by the teachers and students in Kuwait regarding the value of physical education as, "It's nice for a break, but has no intrinsic value".

In conclusion it has been proven that the attitude of the teacher can positively or negatively affect the attitude of the students (Brandon & Evans, 1988). It seems that while these particular Kuwaiti teachers may be educated specifically to teach physical education, the British teachers, even though two were without specialist physical education training, were more dedicated to the lesson and were able to give more positive support to the students.

6.21.7 Support for Physical Education:

There is as I stated before, a much greater public awareness of the health benefits of physical activity in the UK. Governmental support and endorsement of activity lends further credence to physical education. Professional organizations such as PEAUK which, with its comprehensive journals, assist the physical education teacher keep abreast of this ever-expanding subject. The national conferences and workshops also instill in the teacher a higher level of awareness and understanding of his/her chosen profession. The national curriculum which posed many practical problems for teachers was divided by key stages and thoroughly explained. The teachers role and responsibilities within this new curriculum was also examined in detail. PEAUK assists the teachers in defining and respecting his/her profession, reinforcing that he/she is indeed a professional with a valuable subject which must be taught fully, and dedicatedly. In America, AAHPERD serves the same purpose, to inform and support individuals interested in physical activity and physical education. Journals, conferences, and seminars emphasize the need for continuing education and professionalism. The value of physical education is never in question, this reaffirms to the average teacher of physical education there is an essential need for, and purpose behind his/her career. There is also the International Association for Health, Physical Education, Recreation, and Dance (IAHPERD), which serves the international community, allowing publication and communications between physical educators the world over. In Kuwait teachers do not have any such organizations.

There is the National Teachers Union but this is an organization dedicated to teachers rights, and does not concern itself with one particular branch of teachers. While the Kuwaiti teachers are able to join PEAUK, AAHPERD, and IAHPERD and gain information from the journals, they are isolated from the group feeling or camaraderie of the organization. It is not feasible for the average Kuwaiti teachers to fly to England or America for a weekend conference or a one day teaching seminar. It is a possibility to open a branch of IAHPERD in Kuwait, but this would take an extremely motivated individual willing to go against public and professional opinion. He or she would have to be willing to be responsible for the chapter for a good many years while they are gaining a foundation within the physical education community.

6.21.8 British and Kuwaiti Boys' Extra-curricular Physical Activity

The amount of physical activity adolescents engage in during free time is very important. The Allied Dunbar Fitness Study (Sports council and Health Education Authority, 1992) found that there is a direct relationship between the amount of physical activity engaged in adolescence and the amount of physical activity as an adult. Results indicated that 25% of 14-19 year olds who were considered active were later considered to be very active adults; conversely only 2% of those teenagers considered inactive later became active adults.

6.21.9 Physical Activity Outside the Physical Education Lesson:

The students were asked if they were involved in any physical activity within the school but outside the physical education class, as well as any physical activity outside school. The two groups pre-test and post-responses to this question appear in table 6.2.

Table 6.2 British and Kuwaiti boy's rate of participation in activities within the school but outside PE and in activities outside the school.

	Pre-test		Post-test	
	British n = 41	Kuwaiti n = 50	British n = 41	Kuwaiti n = 50
In school other than PE lesson	68% (n = 28)	48% (n = 24)	71% (n = 29)	58% (n = 29)
Outside the school setting	76% (n = 31)	58% (n = 29)	68% (n = 28)	50% (n = 25)

Outside the physical education setting there were significant differences in the amount of the physical activity engaged in by the two groups. Results of the pre-test indicated that 68% (n=28) of the British engaged in physical activity in school but outside the physical education lesson, and 76% (n=31) were active outside the school setting. The Kuwaiti boys pre-test results were significantly less active with 48% (n=24) active in school but outside physical education, and 58% (n=29) active outside of the school setting.

This same trend was revealed post-test for both groups. The British boys were more active than the Kuwaiti boys in and outside of the school setting. These findings of the intervention study support the earlier findings of the preliminary study which indicated that the British boys engaged in more physical activity in and outside of the school setting than the Kuwaiti boys. There could be a variety of reasons for this result. In the UK the programme was continually interrupted, there was very little continuity which could lessen the impact of the information. In Kuwait this programme was very different from the students regular physical education lesson. The students were unaccustomed to instruction in physical education and there was little cultural value placed on either physical education or physical activity. In addition the students previous years of experience of carefree physical education would also have a great impact on the students choices. The programme was not long enough to affect the long standing habits and attitudes of the two groups.

6.21.10 Type of Extra-curricular Activities - Team or Individual:

Table 6.3 displays responses of the pre-test regarding the type of extra-curricular activities for the British and Kuwaiti boys.

Table 6.3 The type of extra-curricular sport students participated in as reported in the pre-test.

Pre-test	Team Sport	Individual Sport	Both	Total
British Boys	26% (n = 8)	3% (n = 1)	71% (n = 22)	N=31
Kuwaiti Boys	29% (n = 8)	21% (n = 6)	50% (n = 14)	N=28

There was only a small number of students in both groups who participated only in individual physical activities, there were more Kuwaiti than British (3% (n=1) of the British boys and 21% (n=6) of the Kuwaiti boys). Seventy-one percent (n=22) of the British and 50% (n=14) of the Kuwaiti boys engaged in a combination of group and individual activities, with the remaining percentage engaged in team games only. Table 6.4 displays post-test responses of the British and Kuwaiti boys regarding extra-curricular activities.

Table 6.4 The type of extra-curricular sport students participated in as reported in the post-test.

Post-test	Team Sport	Individual Sport	Both	Total
British Boys	29% (n = 9)	3% (n = 1)	68% (n = 21)	N=31
Kuwaiti Boys	43% (n = 12)	25% (n = 7)	32% (n = 9)	N=28

There was very little change in the pre-test and post-test results regarding this question. The same number of boys engaged in physical activity, and there was no significant change in the amount of individual activity engaged in by the physically active boys. This supports the preliminary study results which indicated that British and Kuwaiti boys of this age engaged more in team sport rather than individual sport, though a large proportion were engaged in both. It seems that the programme was unable to influence the general pattern of students participation in physical activity

but this is not surprising in view of the short duration of the programme compared to the 'last year' time span given in the question.

The question of team games versus individual physical activity has been the crux of many arguments within the physical education field. Indeed the very concept of competition in the classroom has been a topic of heated debate. Will poor performance within a games oriented physical education programme put a student off of physical activity for life? Which is better competitive sports or health-related physical activity? Why? Is it better for everyone or only to a percentage of the student population? Is this an opinion based in fact, or, a personal choice of those in a position to make decisions that affect everyone? The goals of a physical education programme must be clearly defined. These goals must then be supported by administrators as well as teachers, mixed or conflicting signals undoubtedly yield unsatisfactory results. Without proper communication teachers and administrators the athletic student, as well as the student who simply enjoys a bit of friendly activity, will lose out.

There has been a call by some physical educators and researchers interested in the effects physical activity has on health to de-emphasize team sports and highlight health-related or individual sport activities (Pate, 1983). It is cited that individual sports are more likely to foster lifetime physical activity, and the encouragement of lifetime physical activity is one of the main objectives of the physical education lesson (Pate, 1983). The main reason for emphasising individual health-related activities rather than team sports is that while they both encourage activity, team sport activities rely on the availability of rather a lot of other people, specific equipment, and an appropriate playing area. As we grow older and there are many more demands on our free time it is often difficult to mesh all these variables together. A person who only engages in team sports may cease to be active as an adult because there are not enough opportunities for him/her to play his/her sport. Individual activities are exactly that, one person alone can participate. Walking, jogging, swimming, and bike riding are the most popular. They are easily

undertaken with a minimum of expense and planning. Blair, et al. (1987) are very specific about this issue when they state:

> *"Physical education programmes have an emphasis that may be inconsistent with public beliefs and attitudes about exercise. For decades the primary focus of physical education has been to teach sports and games. While this is a worthy goal, it is not consistent with reasons given for participation in regular exercise by adults (although goals for children may differ) (p. 106)."*

The health-related fitness in physical education is an issue that has raised much debate and seems to have divided the physical education profession. The latest change in the national curriculum in the UK gives precedence to team games, almost to the exclusion of other physical activities, in physical education (Stratton, 1995). This action has again set waves of frustration throughout the physical education system. There will always be difficulties in finding solutions to problems arising within education. We are not in isolation testing to see if this person has certain physical or mental capabilities and then simply reporting them. We are trying to teach and positively influence many individuals with their own needs, likes, and dislikes. The greater number of people involved the greater number of problems than might be encountered. This is the greatest challenge to all teachers, how to ensure that all individuals obtain maximum benefit from a particular programme. Everyone involved in the physical education debate should try to keep in mind the students needs above all else. As professional educators we should try and put aside our personal bias either for or against a particular type of physical education and create the best possible learning environment for the students. The teaching of health-related fitness does not necessitate exclusivity. Team games and motor fitness activities should be taught as being complementary and overlapping the health related aspects of physical education. There are a great many skills to be learned through competition and team games (Corbett, 1995). Sportsmanship, cooperation, common goal, pride, and patience, have all been cited as the tenants of team sports (Corbett, 1995). These are attributes needed in many day to day experiences at

home or work and other public and private situations. The major problem with many of the assumptions made about PE is that they are often based solely on the administrators and ministers personal experiences with PE as a child (Comer & Sparkes, 1992). They are, in general, his personal opinions about the value of what is gained from physical education. In fact Comer and Sparkes (1992) found governors of a grant maintained secondary school expressed very definite views when discussing the value that physical education has in their school:

> *"...if you take the whole gambit of PE, it is very important to the school...the games bit ...gets you into the newspaper (p. 8)."*
>
> *"...the last thing most parents are concerned with are PE lessons. The last thing on the report is PE. Even though the comments are relevant, it is looked upon really as an added-on piece. Most parents rarely ask about PE (p. 8)."*
>
> *"...you'll find that when you come to parents' evenings...PE staff are never there because they are never required (p. 8)."*
>
> *"I'm very old fashioned in games and PE. I like to see everyone having a go but I like to see good strong teams...that's what PE and games is, isn't it...I really don't go along with this 'sport for all' approach (p. 9)."*
>
> *"There is a little bit of it (health and fitness in the curriculum) within the school, I don't want to see too much of that. I want them out on the field playing rugby (p. 9)."*

The recent restructuring of the national curriculum in the UK has affected the physical education curriculum at all levels of education (PEA Curriculum Committee, PEAUK, 1994). Team games have been given precedence over other health-related activities throughout all years of education. This change was prescribed by the Minister for Sport who has incredibly blamed social and moral decline in Britain on the lack of 'good old fashioned sports in PE class' (Evans, 1990; Penney & Evans, 1994). According to Ian Sproat, the Minister for Sport, the senseless murder of toddler James Bulger might not have occurred if the *"little thugs"* convicted of the crime would have been able to vent their aggression in a solid game of soccer, hockey

rugger or some other traditional, competitive sport, rather than being subjected to health-related curriculum, *"aerobics, stepping up and down on bars, or going for country rambles"* (TES, 1994, p.16). The problem with emphasizing only team or competitive games, apart from the fact that there is absolutely no documentation to support the claims that there would be less violence if everyone played more games, is that it neglects that section of the population which simply does not have the skill level needed to participate at a higher competitive level. It also neglects to admit that not all aspects of team games are sweetness and light. There were many Kuwaiti boys who said they did not participate in sports/games because of fear of bodily injury. One boy stated that a close friend of his was paralysed when his neck was broken in a rough game of soccer. This case is of course extreme, however, there are many 'players' who take winning and losing as living and dying, and beware he who makes an error and costs the game.

> *"Certainly, rampant competitivism and an overdose of team games is not what children need or desire. On the other hand competitive games do have the capacity to foster co-operation, pride in oneself and others, a sense of satisfaction and achievement and a desire to make physical activity a part of one's life. But they can also promote selfish individualism, ruthless competitivism, a lasting sense of failure and alienation and a desire to stay clear of anything at all to do with physical activities such as games."* (Penney & Evans, 1994, p.10).

Teaching only health-related activities and relegating team games within physical education to the annals of history is also a totally unsatisfactory solution. Many students enjoy sports/games but within that exact context, it is a game, meant to be fun (Sports Council for Wales, 1993). To delete team sports from physical education lessons would be detracting from the overall enjoyment of the class for many students. Rather, while teaching soccer or any other team sport the teacher can explain to the students how that particular activity affects the body. The basic need of the body to be active in order to be healthy. Athletics is another area where the health benefits, especially the cardio-vascular and weight control effects of

running, jogging, and walking can be discussed. This type of educational dialogue can be adapted to every activity taught in the class. The health benefits of physical activity on the entire body could, and should be a constant topic of conversation within the physical education lesson. In this respect physical education is different from many of the basic classroom environments. There is a less restrictive atmosphere in physical education, there are many opportunities for free dialogue between the teacher and pupils. Personal interaction should be encouraged and used to the maximum by the teacher. Lack of formality in PE can foster a friendly relationship between the students and teachers allowing students to make more personal inquiries. Even during my short stay in the Kuwaiti school there were students who came to ask me questions about their physical activity. By speaking to the students about physical activity and health topics they felt comfortable coming to speak to me. They knew that I had information for them and I was willing to speak with them about the subject. They were at ease when speaking to me and this can only be a benefit for both teachers and students. Interactive dialogue can give the teacher information about the needs of the students. What they know, what they don't know, what they are interested in learning about. This less authoritarian situation can be more conducive to student participation and enjoyment of physical activity. The teacher has the opportunity to be a powerful role model with whom adolescents can relate. It is necessary to live the part, not just give the information. Acknowledging that it can be hard to be active indicates to the students that he is not alone if he feels like quitting. It is in the teachers power to encourage through his own participation. Teaching that even though it can be hard it is well worth the effort expended, that the benefits exceed the personal output, and there is a sense of satisfaction in simply completing the task. Physical education teachers must emphasize not criticize. Sometimes the last thing on a person's mind is physical activity. This is something that the physical education teacher must address with consideration and compassion. You simply cannot force your opinion on students. Only through understanding of need can there be acceptance of responsibility. Gone

are the days of students being drilled like army recruits, elitist competitive sports programmes instill a fear of failure in many adolescents, teachers must recognize this and set realistic attainable goals for all students. It is in this manner that many believe students can be taught to enjoy physical activity and carry on being active into adulthood (Wilcox, 1987).

6.21.11 Reasons for Non-participation in Extra-curricular Activities:

The students' reasons for non-participation in physical activities were varied. Students gave more than one reason for non-participation in physical activities. these reasons are presented in table 6.5 in a descending order according to frequency.

Table 6.5 The most common reasons for British and Kuwaiti boys non-participation in physical activity ranked according to frequency, as indicated by inactive students.

Reasons	Pre-test		Post-test	
	British n = 10	Kuwaiti n = 22	British n = 10	Kuwaiti n = 22
I do not like the activity leader (teacher, coach, etc.)	----	1	----	4
I am always picked last, then I sit out most of the game.	----	2	----	2
I am not very good at any particular sport.	----	3	1	1
I do not like to compete with other.	1	----	----	3
My parents do not allow me to join sport teams.	----	4	----	4
My friends do not play any sport.	2	5	----	6
I can't be bothered.	3	----	----	----
I do not like sports.	----	----	2	----

The reasons given for non-participation in extra physical activities, both in Britain and Kuwait, seemed to reflect attitudes toward physical activity rather than ability to participate. The British boys who didn't participate in any physical activity stated that they didn't like the competition involved in the activities available. While

it is not up to the researcher to argue the truth of this statement, it does seem that with the variety of activities available in Britain, an active non-competitive hobby could be found, if of course one was sought. Some boys also indicated that none of their close associates participated in any physical activities, this may be harder to overcome because the attitude of a significant person can greatly influence the attitude of an individual (Godin & Shepard, 1984). This is especially true of adolescents who are trying to create their own opinions and tend to accept peer influence more readily than the perceived authoritarian influence of parents. Lastly, and perhaps rather to the point, some of the students indicated they simply couldn't be bothered. During an interview at the conclusion of the programme one British boy clearly emphasized this last point. There was no improvement in any of his test scores and my personal observation of him throughout all parts of this project was that he did as little as possible and often begrudgingly. I asked him why he didn't participate and he said he didn't like physical activity. When asked what could encourage him to participate he quite amiably said that, if he were paid he'd move, if not he'd stay where he was. What can be done for this type of student? In the "good old days" he might have been forced to run laps, this only reinforcing his belief that physical activity is not enjoyable and is a form of punishment. These days we approach with a "gently, gently" attitude. In individual centered learning we must allow variation of participation. However we can still affect the knowledge and information the students gain from the course. Class discussion, handout sheets with pertinent information, a physical education/ physical activity bulletin board, can all have a subtle effect on the students attitude toward physical activity. This will not give actual physical benefit at the present time, but it could be beneficial in the future. We must remember that in physical education we are meant to ***educate*** for the students future activity, not simply provide students with activity in the present. As an adult, accepting more responsibility for his/her life and health, he/she may be motivated to take positive action in regards to physical activity if properly physically educated.

The reason given most often by the Kuwaiti boys who did not participate in physical activity was also, "I don't like competition/team games." They stated that they were not good at any particular sport, and that they simply did not like sport. Like the British boys before, these Kuwaiti boys simply made the conscious decision not to participate in physical activities, it was based solely on personal perceptions of value versus cost. During final interviews with these boys they stated that they were in fact too intelligent to waste their time on sport. They all held fast to the idea that boys who were physically active in sports clubs were from the lower 10% academically of the students. The physically active student simply didn't care (were careless) about schoolwork. This opinion was also shared by those students who *were* physically active. One student said he loved to be active and was glad he was good at sports because he was too stupid to do anything but physical education. He said that he was not as smart as the others because he wasted his time on soccer, and that smart boys were never the boys who were physically active. This too was the opinion of the teachers who said that the intelligent boys were not active because they were careful about their studies, that the active boys were from the lower 10% of the class academically. This is a rather simplistic explanation of what the teachers and students perceive as fact, a classic case of deductive reasoning. Because a student has poor grades and is physically active doesn't prove that there is a cause and effect relationship. How long does he play? How often? Does he watch TV as well? How often does he study? How long? Does he get support with his studies? Is success in academic work a family priority or not? There are so many factors that effect academic success to pin-point poor marks on physical activity is nearly impossible. In fact there are various studies which indicate that, if anything, physical activity can have a positive effect on the students academic performance. The following quote published by the American School Health Association clearly illustrates this point:

"Increased physical fitness improves heart/lung function, reduces body fat, and decreases the risk of diseases associated with unhealthy lifestyles. Other benefits may include learning readiness, and enhanced academic performance. When children improve their physical fitness levels, the documented benefits include better school morale, improved class behavior, and reduced anxiety and tension. Physical activity and sports are positive healthy alternatives to drugs for today's youth (A.S.H.A. Newsletter, May, 1992)".

In addition there are a great many American students who receive athletic scholarships to top universities. These people not only attain top marks academically in order to gain acceptance into university, they are also top athletes which the university is willing to sponsor scholastically in order to have them on their intercollegiate team. By the Kuwaiti cause and effect reasoning, physical activity could in actuality be a link to success rather than failure.

6.21.12 Seasonal Activity Levels of the British and Kuwaiti Boys:

Students were asked how many days a week during each of the four seasons they were involved in any physical activity that made them sweat or breathe hard for a minimum of twenty minutes three days a week. These activities could range from brisk walks to team sports. The British boys indicated pre-test and post-test that summer was their most active time; winter was the least active period for the British boys in both pre-test and post-test responses. The Kuwaiti boys showed no consistent pattern in their seasonal physical activity levels as reported in the pre-test and post-test. They did however clearly indicate they were more active in the spring both pre-test and post-test. Complete results appear in table 6.6.

Table 6.6 British and Kuwaiti boys seasonal physical activity levels, of 3 days per week- 20 minutes per session.

	Pre-test		Post-test	
Season	British n = 41	Kuwaiti n = 50	British n = 41	Kuwaiti n = 50
Spring	56% (n = 23)	64% (n = 32)	39% (n = 16)	80% (n = 40)
Summer	63% (n = 26)	48% (n = 24)	56% (n = 23)	74% (n = 37)
Autumn	49% (n = 20)	54% (n = 27)	44% (n = 18)	66% (n = 33)
Winter	34% (n = 14)	58% (n = 29)	29% (n = 12)	64% (n = 32)

Data as presented in table 6.6

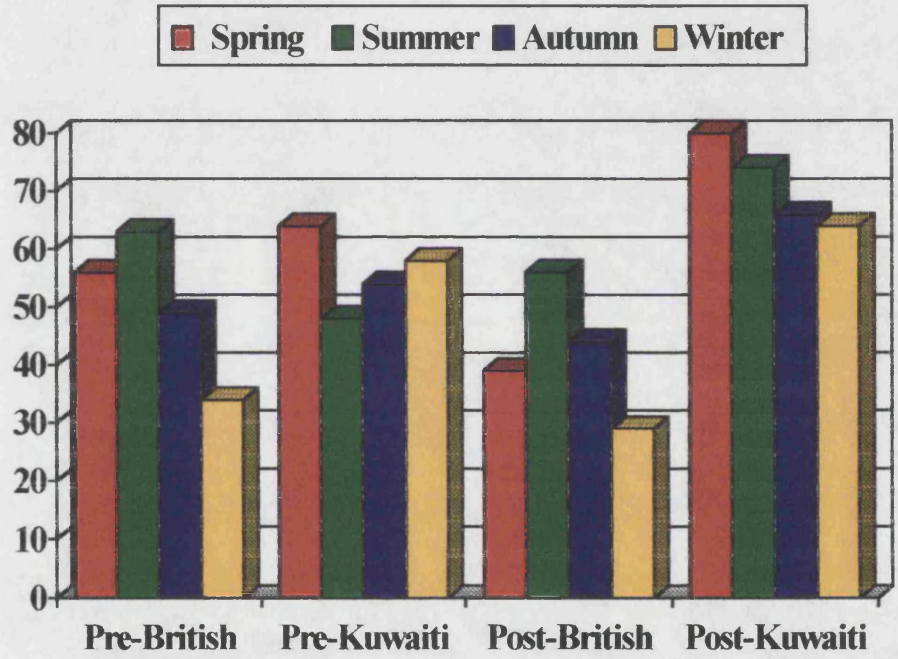


Figure 6.3 British and Kuwaiti boys seasonal physical activity levels, of 3 days per week- 20 minutes per session.

Physical activity levels varied throughout the year. The British were most active in the summer, this being a time without school, long daylight hours, and relatively dry warm weather. As reported in the pre-test 63 percent (n = 26) of the boys were most active in the summer. The lowest participation rate was in the winter with 34% (n=14) engaging in physical activity. One boy stated he was most active in the summer but preferred the freshness of winter, he was a mountain bike

enthusiast and felt the cold, wet, and muddy slickness of the trails added to the fun of the activity. This was also revealed in the preliminary study. Physical activity was higher in summer and lower in winter.

Kuwaiti boys in contrast were most active in spring, and least active in summer. While a person can guard against the subtle cold and dampness of England, only the foolhardy would attempt biking, jogging, or even walking for any amount of time in the heat of Kuwait's summer sun. The radiated heat from pavements and buildings could be detrimental rather than beneficial to an individuals' health. The mean temperature in Kuwait for June, July and August is 44 c with a maximum of 48 c. It was therefore no surprise to the researcher that the pre-test indicates that the boys were least active in the summer and most active in spring and winter, 64% (n = 32) and 58% (n = 29) respectively. Although these results did not entirely parallel the preliminary study, the spring season appeared to be the most active season for the Kuwaiti boys in both the preliminary and intervention study. An inconsistency of results between pre-test and post-test of the intervention study could be due the difficulty some Kuwaiti boys have in distinguishing between the different seasons in Kuwait. British results on this question were consistent, pre-test and post-test, and parallel the preliminary study.

There was therefore a relationship between weather and participation in physical activity. This relationship also emerged in England. While the warm summer days may not have been enough to encourage more activity, bad weather would almost certainly adversely affect participation in physical activity. In the preliminary study the overwhelming majority of the British students indicated they liked physical education but resented being made to participate in outdoor physical education during the winter months. This corresponds with the survey results indicating winter is the least active period for the British boys. They hated being active in uncomfortable, i.e. cold and wet, weather. This opinion was stated repeatedly from school to school. The students felt they were 'forced' to participate in physical education under adverse weather conditions. They had no desire to do

outdoor physical education and even the students who were very fond of physical education and physical activity would not have participated if they thought they had a right to refuse. Even more than the inclement weather, the students were angry that while they had to stick to the standard physical education uniform which was shorts and T-shirt (thereby freezing all and sundry), the physical education teacher adding insult to injury wore an athletic training suit with long sleeves and pants, and in one case topped it off with an umbrella. It rains approximately 200 days a year in the UK, to forego outdoor physical education because of wet weather would seriously curtail the physical education curriculum. The teachers seem to be trying to establish regularity in physical activity, but at the same time there is a loss of morale. It is the dilemma constantly faced by the physical education instructor in the UK. It is a very adult act to do something that you don't really want to because it is good for you. Telling students in T-shirts and shorts about the virtues of physical activity in 6 ° C weather is akin to telling a six year olds to eat their vegetables because they will make them healthy. Adults who over indulge almost always know that it is not good for them. They simply do not have the will power or desire to change. Insisting that students participate in foul weather might form more negative attitudes than positive.

While working in the UK there were several days with such inclement weather that outdoor activity was not feasible, the resulting indoor lesson was chaos. Students were very inattentive and there was absolutely no room to move with two physical education classes, boys and girls, sharing the same facilities. An outdoor physical education kit of long sleeves and long pants may is an easy solution to cold and blowy fall and winter days. While this may not encourage extra activity on the part of disinterested students, it may help lessen some of the resentment towards physical activity.

During interviews Kuwaiti students indicated they also disliked to participate actively in physical education during times of high temperatures. This does not correspond with the survey results from the preliminary study, and both the pre-test

and post-test results of the intervention study which indicated more than 50% of the Kuwaiti boys were active in the summer. Students said they did not want to get hot and sweaty because they did not want to shower in order to go to their next lesson. This could present a greater barrier to participation in physical education than the students perceptions of physical activity.

Non-participation in physical education is not new and will take ingenuity to address. It seems British and Kuwaiti teachers face the same problem concerning weather conditions and there seem to be few solutions. More indoor facilities would be the ultimate solution yet that is unlikely due to financial restrictions. Other than positively affecting the student's attitude toward physical activity to the extent that the weather would be of little concern to them, there seems to be little that can be done to affect the students seasonal activity patterns.

6.21.13 Most Popular Physical Activities:

The boys were asked to list the five physical activities they most enjoyed. The British boys indicated that they had engaged in 27 different activities pre-test; the Kuwaiti boys had 20 different activities in total. Post-test the British boys had 22 different activities; the Kuwaiti boys had 19 different activities. Table 6.7 presents the top ten activities, pre-test and post-test, reported by the two group.

Table 6.7 Ten most popular activities ranked from 1 to 10 as reported by the British and Kuwaiti boys pre-test and post-test.

	Pre-test		Post-test	
Activity	British n = 41	Kuwaiti n = 50	British n = 41	Kuwait n = 50
Soccer	1	1	1	1
Tennis	2	--	2	--
Rugby	3	--	3	--
Running	4	8	4	5
Swimming	4	4	5	3
Basketball	6	3	--	4
Cricket	7	--	6	--
Biking/Cycling	8	7	9	9
Golf	9	--	--	--
Hockey	9	--	--	--
Walking	9	9	--	8
Volleyball	--	2	9	2
Handball	--	5	--	6
Table tennis	--	6	9	7
Athletics	--	10	--	10
Rounders	--	--	7	--
Snooker	--	--	8	--
Baseball/Softball	--	--	9	--

Results of this section corresponded well with the type of physical activity the students of both groups stated they most preferred. The majority of the boys preferred team games and results of this question supported that response. Both in the UK and Kuwait soccer/football was the number one choice of physical activity pre-test and post-test. These results parallel findings of Balding (1994) which indicated that soccer was the number one choice of physical activity for a test group of 1008, 15 to 16 year old British boys. Tennis, volleyball, basketball, and handball were ranked high, whilst walking and athletics were ranked low (Balding, 1994).

6.21.14 Sedentary Hours:

The boys were questioned about their free time after school. They were asked to estimate the amount of time they spent on homework, watching TV, or playing video games. The results are presented in table 6.8. Figure 6.4 is a box plot of the British and Kuwaiti boys daily sedentary hours.

Table 6.8 The average sedentary hours presented by hours and minutes for the British and Kuwaiti boys pre-test and post-test.

	Pre-test		Post-test	
Activity	British n = 33	Kuwaiti n = 48	British n = 33	Kuwaiti n = 48
Home work/ School work	1:37	3:43	1:52	2:43
Television	2:34	1:36	2:19	2:06
Computer/ Video Games	1:04	0:42	1:01	0:34
Total	5:15	6:01	5:12	5:23

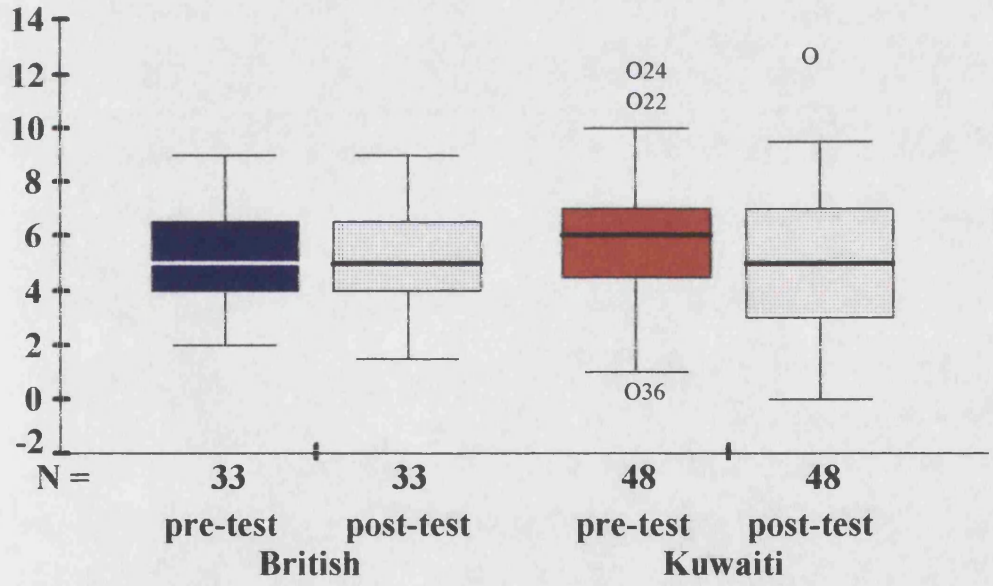


Figure 6.4 British and Kuwaiti boys daily sedentary hours.

The t-test for independent sample indicated no significant difference between the British and Kuwaiti boys at the pre-test and post-test of daily sedentary hours, at level ($p \leq 0.05$) please refer to figure 6.4. These findings also support the findings of the preliminary study of five hours per day of sedentary activities for the British and Kuwaiti boys.

The British boys reported that they spent more than five hours after school engaged in sedentary activities, fifty hours of sedentary activities during a two week school period, excluding weekends. Additionally there are 47 hours of sedentary school lessons, a two week total of 97 sedentary hours versus three hours of physical education, which is not all activity time. The Kuwaiti boys stated that they engaged in six hours of sedentary activities after school, 60 hours in a two week school period. In addition they had 57 hours of sedentary school hours, a two week total of 117 sedentary hours versus three hours in physical education. Figure 6.5 illustrates the two groups amounts of sedentary hours, in school and out of school, compared to time spent in physical education lessons during a two week period.

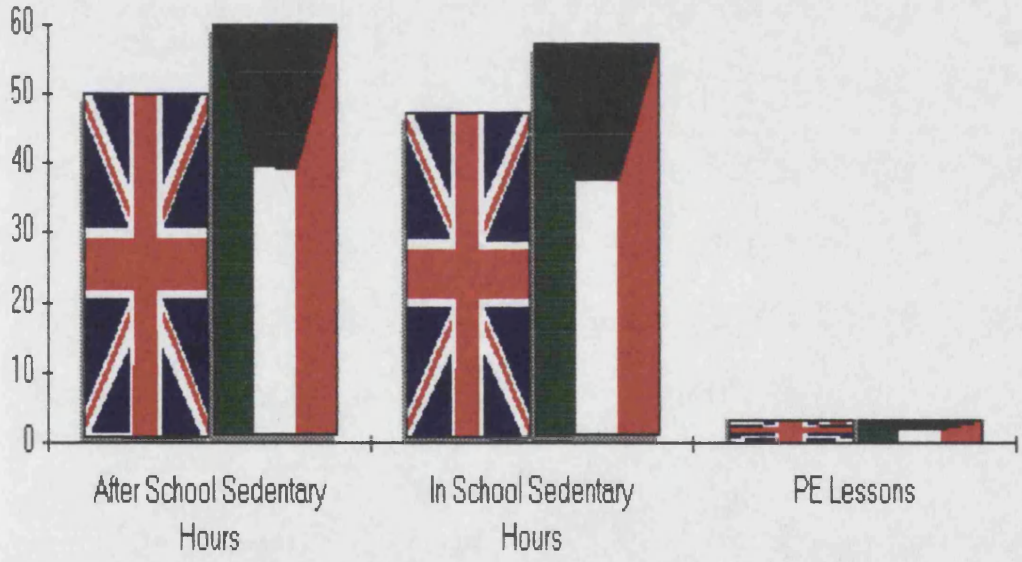


Figure 6.5 Two week period of physical education compared to sedentary hours.

There is absolutely no comparison between the two groups sedentary hours and physical education lesson time. This disparity further illustrates that physical education must present a strong and positive message about incorporating physical activity into everyday situations. Physical education itself must incorporate more activity for the students. There will be no sudden change in all the students attitudes

about physical activity. The students home and social environment might not be pro-activity, further reducing the possibility for change. Progress toward higher physical activity levels will be a long hard struggle. Secondary school especially must continue to encourage and provide opportunity for physical activity, at the same time they must provide the students with a knowledge base about the health benefits of physical activity to take into adulthood. Elementary school students are allowed break periods which often result in periods of higher activity levels than the physical education lesson (Armstrong, 1989). Secondary students are not allowed this freedom, in some cases physical education is solely responsible for the students physical activity. Even with less than optimum time allowance physical education must do its best to be as active as possible, and as informative as possible. This was the philosophy behind the curriculum developed for this project. It was recognised from the preliminary study that there is not enough physical education time in the curriculum and that this is a problem that will take much time to resolve. Furthermore there was not enough activity or education within the average physical education lesson. Both of these issues are in the hands of the educator. There are many established programmes which can be adapted to individual situations, and affect positive change in activity levels within the physical education lesson. Only through long term education and support will attitudes and knowledge about physical activity be able to foster actual change in habitual physical activity levels.

6.21.15 Personal Health and Safety Habits:

On this section of the questionnaire the British and Kuwaiti boys answered questions regarding various personal health habits. Personal habits are those activities that make up our individual lifestyles, lifestyle in turn affecting health (HMSO, 1991; US DHEW, 1990). Infectious diseases, which were the major causes of death in the past, have been replaced by "lifestyle diseases" (Jones & Bates, 1990). Lifestyle has been a major focus of the behavioural sciences since 1945

(Matarazzo, 1984). In 1972 the American team of Belloc and Breslow indicated that there were seven personal practices highly related to physical health:

1. *Sleep 7 to 8 hours a day*
2. *Eat breakfast regularly*
3. *Eat at mealtimes only*
4. *Maintain proper weight*
5. *No smoking*
6. *Little or no alcohol*
7. *Regular physical activity*

This investigation of personal habits is in keeping with the health aspects of physical education and physical activity, and the possibility of cross-curricular lesson content in physical education. While the British boys received instruction on personal health habits and disease in health class, there is no such comparable lesson in Kuwait. The entire area of personal health falls through the educational cracks in Kuwait. The Kuwaiti boys do not receive formal instruction about healthy eating habits, weight control, or the effects of physical activity on health. It was therefore important to investigate these areas of interest with the students.

6.21.16 Sleep Patterns:

On average the British boys bed time was 10:43 p.m. and the Kuwaiti boys was 10:30 p.m. at the pre-test. The post-test bed time changed for both groups the British boys bed time was 11:06 p.m. and the Kuwaiti boys 11:04 p.m. The British boys average waking time was 7:18 a.m. and the Kuwaiti boys was 6:02 a.m. at the pre-test. The post-test the British boys' waking time was 7:15 a.m. very similar to their pre-test response. There was a change in the Kuwaiti waking time post-test which was 6:30 a.m. On average the British boys took about eight hours a day for sleeping pre-test and post-test; the Kuwaiti boys slept for about seven and half hours each day pre-test and post-test. This is roughly in line with the results of the

preliminary study which indicated an average sleeping time of 8 hours for both groups.

The greater majority of the boys indicated they ate breakfast regularly; 61% (n=25) of the British, and 80% (n=40) of the Kuwaiti boys pre-test. Post-test 59% (n=24) of the British and 74% (n=37) of the Kuwaiti boys had breakfast regularly. Slightly higher results were found in the preliminary study, which consisted of larger groups of subjects in both countries. In the UK 84% (n=94) and in Kuwait 74% (n=99) of the boys ate breakfast daily. The preliminary and intervention studies were not able to take place at the same time of the year and may explain some differnces in responses. The pupils are more likely to respond what is their common practice at the time and this appeared to vary between summer and winter.

6.21.17 Diet:

The greater majority of the boys did have breakfast daily; pre-test 61% (n = 25) of the British and 80% (n = 40) of the Kuwaiti boys; post-test 59% (n = 24) of the British boys and 74% (n = 37) of the Kuwaiti boys always ate breakfast.

On the subject of weight control 22% (n = 9) of the British boys and 62% (n = 31) of the Kuwaiti boys pre-test, had tried to lose weight. Post-test 17% (n = 7) of the British Boys, and 58% (n = 29) of the Kuwaiti boys tried to lose weight. As there is a decrease in the students' responses to the question, "Have you ever tried to lose weight?", results indicate a slight but not excessive degree of unreliability for this question. The methods indicated by the British and Kuwaiti boys as a mean of weight control is presented in table 6.9.

Table 6.9 Methods of weight control used by the British and Kuwaiti boys.

	Pre-test		Post-test	
Method	British n = 41	Kuwaiti n = 50	British n = 41	Kuwaiti n = 50
Diet only	n = 2	n = 2	n = 2	n = 4
Exercise only	n = 3	n = 12	n = 3	n = 7
Both	n = 4	n = 17	n = 2	n = 18

Similar to the findings of the preliminary study there seemed to be more Kuwaiti students concerned about their weight than their British counterparts.

There were 12% (n = 5) of the British boys and 24% (n = 12) of the Kuwaiti boys pre-test who had tried to gain weight, of the British boys (n = 3) and the Kuwaiti boys (n = 1) who tried to gain weight by exercise alone. Post-test there were (n = 6) of the British boys and (n = 11) of the Kuwaiti boys who had tried to gain weight. Of the British boys (n = 5) and of the Kuwaiti (n = 2) used exercise alone as a mean of weight gain. These intervention study results are similar to the findings of the preliminary study which revealed that more Kuwaiti boys than British boys were concerned about gaining weight

On the subject of weight control a significant number of both groups had tried to lose weight. These are adolescent 15 and 16 year old boys who need to acquire a proper diet to sustain healthy growth. There were however 22% (n = 9) British and 62% (n=31) Kuwaiti boys who had tried to lose weight. Of the British boys two used diet only, three used exercise only, and four used both methods to *lose* what they perceived as improper weight for height. Of the Kuwaiti boys two used diet only, 12 exercise only, and 17 used both methods to lose weight. There seemed to be no medical need for the weight loss. Only two of the 31 Kuwaiti boys who indicated that they tried to lose had sought advice from a physician. The boys personally felt that they needed to lose weight. While a few of the boys were significantly overweight, it is worrisome that these boys would restrict their diet, some indicating severe dieting, which could have a dramatic effect on their future health. An effect that could ultimately be more damaging than a few extra pounds (DeWolfe & Jack, 1984). While diet and exercise in combination produce the greatest weight loss results (Epstein, Wing, Penner & Kress, 1985; Kenrick, Ball & Canary, 1972), it may be difficult for an individual to maintain both a weight reduction diet and an exercise programme. It is recommended that the individual begin with the exercise programme, developing the exercise programme initially should help to avoid the large losses of lean tissue associated with diet alone (Kenrick, Ball & Canary, 1972).

There seems to have been no change in the manner in which the boys addressed weight loss issues. During the course of the programme the students were always reminded of the fact that physical activity and a normal diet will help maintain proper weight. The boys were taught the caloric value of one pound of fat and were also reminded that in addition to burning calories physical activity helps builds muscle which can positively change body shape. Adequate physical activity helps to raise the body's metabolism which will help burn calories. There was no change in the amount of students who used diet only as a means of weight control. In fact, post-test there were more Kuwaiti boys who were trying to lose weight with diet only. It seems the programme was unsuccessful in addressing this issue.

6.21.18 Cigarette Smoking:

The boys were asked if they smoked cigarettes and if yes, how often. A very encouraging result indicated that cigarette smoking was not a common habit to these two groups. This was also the case in the preliminary study which indicated that smoking was not a common habit of the two subject groups. Seven percent (n=8) of the British and 15% (n=20) of the Kuwaiti boys smoked cigarettes. The results for this question are presented in table 6.10.

Table 6.10 Smoking habits of the British and Kuwaiti boys.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Smoker	n = 2	n = 1	n = 3	n = 4
Non-smoker	n = 30	n = 49	n = 29	n = 46
# of cigarettes smoked daily	min = 1 max. = 15	min = 1 max. = 8	min = 1 max. = 20	min = 1 max. = 10

Smoking cigarettes affects almost every organ of the human body, from our brains to our unborn children (Glynn, 1989). Cigarette smoking is implicated in a wide variety of physical ailments, the greater percentage of which are life limiting progressing to fatality. So detrimental is cigarette smoking that in 1982 the US. Surgeon General described cigarette smoking as the *"...Chief, single, avoidable cause of death in our society and the most important public health issue of our time."* (US DHHS (1982): Health Consequences of Smoking). It does boggle the mind that people are more than willing to put something in their mouth that came out of a packet with the warning, "DANGER SMOKING CAN CAUSE CANCER AND HEART DISEASE" or the even more implicit, "SMOKING KILLS", printed on the side. These same people probably wouldn't eat or drink anything that was beyond the sell-by date stamped on a package. The study group indicated a very low percentage were smokers. Pre-test only two British boys and one Kuwaiti boy indicated they smoked cigarettes, while post-test three British boys and four Kuwaiti boys stated they smoked. These results are very encouraging, quitting cigarette smoking is a much more difficult task than not smoking to start with. For decades health organizations have been doing their best to discourage youngsters from smoking, it seems that the students in this study at least, are heeding the message (Glynn, 1989). During interviews the boys of both groups said that they did not smoke because it was bad for the body.

6.21.19 Alcohol Consumption:

The drinking of alcohol is relatively high for both groups considering that the British boys were between 15 and 16 years of age and the legal drinking age in England is 18. In Kuwait the selling, possession, and drinking of alcohol is illegal. Of the pre-test respondents 46% (n = 19) and the post-test 56% (n = 23) of the British boys did consume alcohol at least once a week; pre-test and post-test responses of the Kuwaiti boys were the same with (n = 2) subjects reporting they consumed alcohol

whenever it was available. In addition the students close associates also followed this trend with 34% (n = 14) pre-test and 51% (n = 21) post-test of the British boys, and (n = 3) pre-test and (n = 10) post-test of the Kuwaiti boys respondents indicating that their friends also consumed alcoholic beverages. The preliminary study findings also showed more British than Kuwaiti students drank alcoholic drinks.

> *"As a toxic agent, alcohol affects the gastrointestinal system, especially the liver, causing cirrhosis. It also provokes digestive metabolic abnormalities resulting in nutritional deficiencies. In the nervous system, excessive alcohol can result in brain damage...; in the cardiovascular system it can cause cardiomyopathy and arrhythmias. It also is a substantial factor in cancer of the oral cavity, larynx, and esophagus as well as in motor vehicle accidents and other types of trauma"* (Breslow, 1990a, p. 158).

Alcohol consumption is also a very real danger to teenagers (Wechsler, Rohman, Kotch & Idleson, 1984). In America road accidents are the leading cause of death among 15-34 year olds (USDHEW, 1990). DeLuca (1981) reported that between 45% and 60% of all fatal crashes involving a young driver are alcohol related. Teenagers are inexperienced at both activities and the combination is very dangerous. Alcohol can also be addictive. Many people have suffered from the destructive effects of alcohol, directly or indirectly, either through alcoholism and its related diseases or the potentially lethal drunk driver. All bodily systems and functions are affected by alcohol, ranging from the brain and central nervous system, cardiovascular system, to the reproductive system and the unborn child (Gill, Zezulka & Shipley, 1986; Kramer, Majewski, & Trampisch, 1987; Walbran, Nelson, & Taylor, 1981). It was truly a shock when 46% (n = 19) of the British boys indicated they drank alcoholic beverages at least once a week. The students indicated that their close associates also drank. The legal drinking age in England is 18. That such a large proportion of this group had easy access to alcohol was a cause for concern. The issues relating to teenagers and alcohol are extremely complex (Veenker & Torabi, 1984). Many of the dangers of alcohol are taught to the students

in health education as well as through national advertising campaigns. However, the indications are that knowledge is not enough to alter teenager's attitude toward alcohol (Thompson, Daugherty & Carver, 1984). The adolescent seems to feel adults who drink haven't the right to give a sermon on the evils of drink.

Two Kuwaiti boys indicated that they consumed alcohol whenever they could. For myself as a Kuwaiti I was surprised by this. Kuwait is a predominantly Muslim country. It is therefore governed to a large extent by Islamic law. Alcohol is forbidden by all religious and social laws in Kuwait. The sale, possession, and consumption of alcohol can lead to a jail term. To find two 16 year old boys willing to accept this risk for the fleeting pleasure they might get from drinking seemed ludicrous. Why take the risk? The guaranteed anonymity of questionnaire responses prevented me from addressing this issue with the boys specifically. When trying to understand the choices teenagers make which can appear to disregard known possible negative repercussions, we can refer to Veenker and Torabi (1984), who indicate that the knowledge of possible adverse consequences is seldom a deterrent to adolescent alcohol consumption. Even though these two groups of teenagers may live under a different sets a rules in very different cultures, teenagers just seem to need to prove how much they're like "grown ups" how they are capable of controlling their own lives. Post-test the number of Kuwaiti boys that indicated that they drank alcoholic beverages remained two.

6.21.20 Use of Safety Equipment:

A large percentage of the boys owned a bicycle, of the British boys 56% (n = 23) pre-test and 39% (n = 16) post-test; of the Kuwaiti boys 66% (n = 33) pre-test and 66% (n = 33) post-test. The British boys rode their bikes on average one hour and fifty five minutes pre-test and one hour post-test. The Kuwaiti boys on the other hand rode their bikes for an average of one hour a day at the pre-test and one hour and 10 minutes post-test. Safety was not a major concern for both groups the British

boys only 15% (n = 6) pre-test and 7% (n = 3) post-test used any form of protective equipment. The Kuwaiti boys seemed to be less cautious about safety than the British boys only 8% (n = 4) pre-test and 8% (n = 4) post-test used any form of safety equipment while riding their bike. The findings of the intervention study support earlier findings of the preliminary, there was a lack of concern regarding safety equipment when cycling

The British boys seemed to be more concerned than the Kuwaiti boys when it come to the use of car seat belts 61% (n = 25) pre-test and 61% (n = 25) post-test of the British boys used the car seat belt. The Kuwaiti boys only 24% (n = 12) pre-test and 44% (n = 22) post-test used seat belt regularly. This was also the case in the preliminary study, more British students used car seat belts than Kuwaiti students. Even the increase in the Kuwaiti boys post-test results for the intervention study did not compare with the British results. This difference in attitude in using the seat belts between the pre- and post-test for the Kuwaiti boys may be due to the changes in traffic laws in Kuwait; the use of seat belts became mandatory from the second of January 1994.

6.21.21 Habitual Physical Activity:

Many recent studies have revealed that the majority of children in the UK and US are under exercised at least in regard to vigorous aerobic activity (Gilliam, 1982; Armstrong et al., 1990). Sleap and Warburton (1994) found that for a great many school children the walk to and from school was their only period of sustained physical activity. This activity was enforced upon the children during the school week. Results of weekend monitoring indicated these same students had extremely sedentary lifestyles (Armstrong & McManus, 1994). It was therefore of interest to see the percentage of students in our groups that walked to school, even if it wasn't by choice. Table 6.11 indicates the means of transportation to school used by the British and Kuwaiti boys.

Table 6.11 British and Kuwaiti boys means of transportation to school.

	Pre-test		Post-test	
Transportation	British n = 33	Kuwaiti n = 50	British n = 33	Kuwaiti n = 50
Car	24% (n = 8)	84% (n = 42)	27% (n = 9)	88% (n = 44)
Bus	46% (n = 15)	----	46% (n= 15)	----
Bike	----	----	3% (n = 1)	----
Walking	30% (n = 10)	16% (n = 8)	24% (n = 8)	12% (n = 6)

The British boys results indicated that 21% (n = 7) lived a mile or less from the school and yet a higher percentage, 30% (n=10), walked to school pre-test; post-test 24%, (n=8) walked to school. Conversely while the Kuwaiti boys results indicated that 49% (n = 24) pre-test, and 43% (n = 23) post-test, of the students lived a mile or less from the school, 84% (n = 42) pre-test, and 88% (n = 44) post-test of the Kuwaiti boys used the car as a means of transportation to and from the school.

The majority of the boys both British and Kuwaiti lived within a two mile radius of their schools. The shortest distance for both groups was half a mile. The longest distance was 12 miles for the British boys and 15 miles for the Kuwaiti boys. Pre-test responses from the British boys indicated that 24% (n=8) went to school by car. The majority, 46% (n=15) rode the bus, while 30% (n=10) walked. British post-test responses differed only slightly with 27% (n=9) coming to school by car, 46% (n=15), 3% (n=1) by bicycle, and 24% (n=8) walked to school. While the percentage of British students coming to school by car increased the actual number coming by car remained the same.

It seems that the students take the path of least resistance. It takes a lot of dedication to walk when it is easier, and extremely convenient to ride. Why walk? Because it will make them healthier when they are old? Teenagers do not get old, they are always young and capable (Torabi, 1985). Friends meet on the bus and have a chat. It is more social to ride the bus, there is peer group support for it. Teenagers are notorious for telling adults that they must be allowed their freedom and individuality, and then they turn around and try to be exactly like the other kids in

their group. The 'right' clothes, music, and activities identify the individual as part of the group. Does walking for health fit the image? Probably not. But there are other reasons that the students ride rather than walk. First and foremost it is fast and effortless. I know for myself that there were several cold, wet, and grey mornings, walking uphill on the way to school with my children, that I thought to myself the car would be easier. A ride to school by either car or bus keeps a person warm and dry. Why walk unless it is totally unavoidable. Health benefits? The health benefits from physical activity are very remote and abstracted for students of this age (Jones & Bate, 1990). Health benefits to be realized 20 to 30 years down the line matter little if your 'best friend' rides the bus. Sadly, there is also the practical concern for the potential dangers of being a lone walker. In certain cases the bus is actually a safer way to travel for some young people. To encourage walking to school is a worthwhile pursuit but there are many obstacles in the way, not the least of which is the example set by the general population. The British and Kuwaiti society fully embrace the automobile. Driving/ riding is usually the first choice of means of transportation. While true in the UK, this attitude and dependence upon the automobile for transportation was extremely evident in the Kuwaiti boys responses.

The majority of the Kuwaiti boys went to school by car, 84% (n=42) pre-test and 88% (n=44) post-test. Such a high percentage of physically able students coming to school by car seemed unnecessary. Morning temperatures are mild enough to allow the students to walk without the harsh heat of the sun. Late fall and winter temperatures are also extremely pleasant for walking; climate could not be considered a factor for riding to school rather than walking during these seasons. The distance between home and school for the majority of the students is short enough that the journey would not be overly taxing to walk. The Kuwaiti school day starts at 8:00am promptly. Tardiness is unacceptable and students are reprimanded severely for it. Kuwaiti parents, both mothers and fathers, work outside the home. They leave for work at approximately the same time the students need to leave for school. It is easy for parents to drop off the children on the way to work. Some

students said that although their mother didn't work outside the home she would drive them to school because the boys didn't like to get up too early. Going to bed earlier was not considered a necessary step to be taken. Another reason given was that the boy had a sister who *must* have a ride to school, it is generally unacceptable for a girl to walk alone in public. Kuwaiti girls are not encouraged to walk to school or anywhere else, it is easy enough to drop the girl off at her school and then the boy at his. The car is considered an absolute essential in Kuwait. Heat and dust make walking or evening using mass transit (bus service only) a very unpleasant proposition. There are no bus shelters, and while waiting for the bus in the morning may be acceptable, at 1:00 in the afternoon it would be very hot. The greater majority of the boys interviewed stated that they take the car just about everywhere. Walking is the easiest cardio-vascular, health-related exercise available, but it seems to be the least favored method of transportation in Kuwait. There are neighborhood associations trying to encourage people to walk in the local area parks. Wide asphalt walking tracks have been constructed in parks and along the beach front to facilitate walking for all ages. Women and girls could especially benefit, they can walk without infringing on cultural mores which consider a woman walking up and down city streets unacceptable. To address the lack of activity within the female population would take an extremely long time and much effort as it is a phenomenally complicated issue. The term "shameful" although not much used in the UK is definitely linked with certain actions in Kuwait. This a culturally oriented belief and difficult to address. Certain things are simply shameful and are not done by respectable people. A woman walking or jogging for exercise would be lauded in the UK for the conscious effort of self-improvement. It could be considered a flagrant display of bad manners in Kuwait. In a foreign women it would be good for a laugh, but in a Kuwaiti women it would rejected as distasteful. Women who do exercise using the walking tracks will do so at night. This is of course a more comfortable time for exercise with the days' work done and the sun set. However, speaking practically, the darkness also conceals the women from public scrutiny.

It will still take much effort from all concerned to get the Kuwaiti general public moving. Children are taught from a very early age that it's easier to drive. Why leave the cool comfort of home to get hot and dirty in the park, it's easier to stay home. In Kuwait physical activity seems to be linked with childhood, unless of course you are a professional athlete. There were four Kuwaiti fathers that were active in clubs one or two nights a week. Only two mothers did some walking to lose weight. The vast majority of the boys expressed the common belief that once you graduate and work or get married it is no longer appropriate for you to be physically active. During interviews there were several boys who broke into fits of laughter imagining their parents participating in physical activity. Activity equals games, and games are for children. If I don't want to be considered a immature child I will have to stop playing. Even the PE teacher himself said that he only referees because he's too old (45 years) to engage in physical activity. Teachers and students all said virtually the same thing, 'you get married, stay at home, get fat and die'. One Kuwaiti boy was quite sincere when he said once you hit forty you are used up and waiting to die. This is a very deeply ingrained attitude. How to combat it would take very serious and in-depth study.

In Britain the boys gave their a parents a few extra years of life, 50 years old was the age that the British boys suggested was the time to stay at home and accept the ravages of time. These perceived expectations of adult physical activity must be addressed if the students are to see activity in adulthood as unexceptional (Godin & Shepard, 1984).

The last of the personal health and safety habits questions was regarding the regular use of automobile safety belts. Pre-test 61% (n=25) and post-test 61% (n=25) of the British boys used seat belts regularly. There has been a long and active campaign in Britain to lower the chance of severe bodily injury by buckling up. It is the law, and according to national statistics has proven very effective (HMSO, 1991).

Kuwaiti pre-test responses were almost opposite to the British boys. Only 24% (n=12) of the Kuwaiti boys reported using a safety belt. When asked why they did not use a safety belt the boys said that, *"they didn't drive too fast"*, *"they were always in control"*, and that *"they wouldn't have an accident"*. Post-test the number of safety belt users in Kuwait doubled to 44% (n=22). Were these boys examining their personal behaviours and taking a safer option? Not so. Sometimes people are so reluctant to do something that the government needs to pass legislation that forces people to do what's good for themselves, whether they like it or not (Salmon, 1992). On January 2, 1994, traffic laws in Kuwait were amended making the use of car safety belts, and child restraints, mandatory. By January 5, 1994, the date of the post-administration of the questionnaire, this law was already making an impact.

6.21.22 British and Kuwaiti Boys' Opinions of Physical Education Lessons:

One section of the survey contained twelve statements about physical education lessons. The boys ranked their feelings toward physical education lessons using the supplied responses of: Strongly Agree (SA), Agree(A), Neutral (N), Disagree (D), and Strongly Disagree (SD). Table 6.12 represents the mean, mode, maximum, minimum, and standard deviation for the British and Kuwaiti boy's responses to 12 statements about PE. Figure 6.6 shows the box plot of British and Kuwaiti boys' opinions toward PE lesson.

Table 6.12 Results of the British and Kuwaiti boys twelve opinion statements.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Mean	47.31	47.66	48.28	45.16
Mode	52	42	56	52
Max.	59	60	60	60
Min	23	33	24	22
S.	9.25	7.85	9.22	10.03
N	29	50	29	50

Data as in table 6.12.

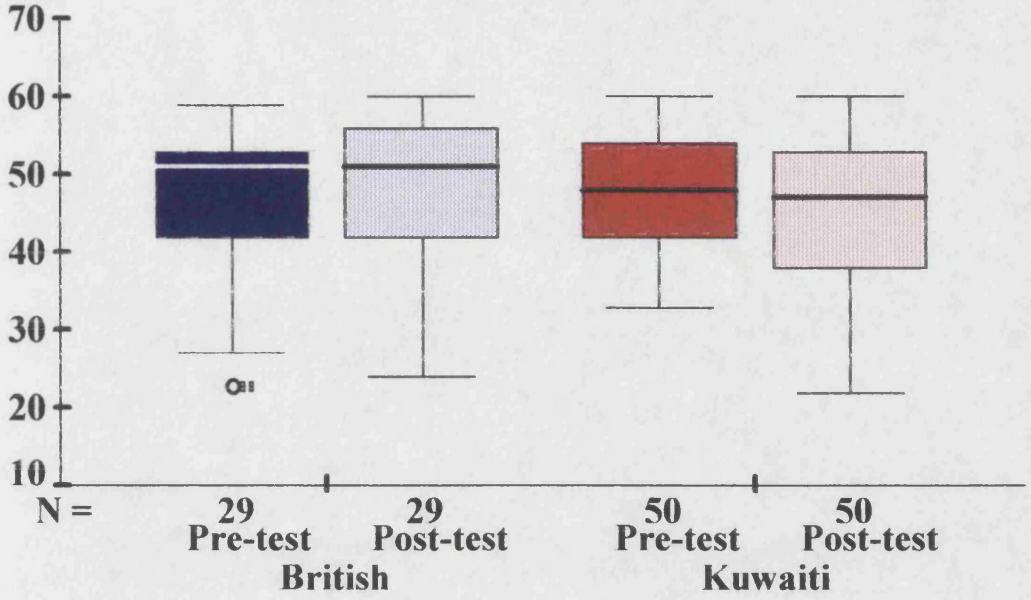


Figure 6.6 Indicates the British and Kuwaiti boy's responses to 12 statements regarding physical education.

The t-test indicates no significant difference between the pre-test and post-test, for neither the British nor the Kuwaiti boys, at the ($p \leq 0.05$) level, as shown in figure 6.6.

6.21.23 British Results on Opinion Statements:

The two basic positive and negative opinion statements about physical education were, 'I look forward to PE lessons' and 'I dislike PE lessons'. British pre-test responses were very positive; only one boy indicated he disagreed and one boy indicated he strongly disagreed with the statement that he looked forward to physical education lesson. The post-test responses were equally positive; one boy indicated that he disagreed with the statement and no student indicated that he strongly disagreed. Pre-test 24 of the British boys strongly disagreed with the statement 'I dislike PE', another 11 students disagreed with the statement. Post-test there were

fewer British respondents however opinion was still strongly supporting physical education with 19 students strongly disagreeing with the statement and 6 disagreeing with the statement. Only one British boy, pre-test and post-test, strongly agreed with the statement, 'I dislike PE lessons'. While ***why*** the students like physical education has many factors, the very positive opinion gives the physical education teacher a very powerful foundation. Students enjoy physical education for many reasons. Physical education is different from standard lessons there is no denying that, but that is not necessarily a bad thing. If the teacher can impart positive reinforcement of the attitude that physical activity is fun as well as beneficial, the battle is half won (Brandon & Evans, 1988). The students coming to physical education after being "hemmed in" by lectures and other more restrictive lesson structures than that of physical education can find a sense of relief, a lessening of frustration and anxiety. Physical educators must encourage the students to recognize the fact that as adults in their various vocations the students may well experience many of the same feelings of constraint. Educating the students to recognize that the physical activity in physical education that relieved their stress and gave them enjoyment as teens can serve them in the same way as adults. Teaching that physical activity, rather than the detrimental and widely used alternatives of alcohol, cigarette smoking, or overeating, could help teens as well as adults combat stress in a healthy, positive way, can and should be an objective of the physical education instructor.

6.21.24 Kuwaiti Results on Opinion Statements:

The Kuwaiti students responses closely paralleled the British students. Pre-test no boy disagreed with the positive statement about physical education while one boy strongly disagreed that he looked forward to physical education. Post-test responses were similar, one boy disagreed and three boys strongly disagreed with the statement, 'I look forward to PE lessons'. Pre-test 24 of the Kuwaiti boys strongly disagreed with the statement 'I dislike PE', another 12 students disagreed with the

statement. Post-test the students opinions still strongly supported physical education, 31 students strongly disagreed with the statement and four disagreed with the statement. Three Kuwaiti boys, pre-test and nine post-test, strongly agreed with the statement, 'I dislike PE lessons'. Responses were for the most part very positive, the students liked physical education, there was a willingness to attend and take part. However, for the Kuwaiti group only, participation was when and how the students deemed necessary. The Kuwaiti early response to the implementation of the health-related curriculum was not viewed to be positive by the researcher.

6.21.25 Comparison of British and Kuwaiti Opinion Statements:

During interviews both the British and Kuwaiti boys indicated that they thought physical education lessons helped relieve tension and stress, helped keep the body fit and healthy and can even help you to live longer (although some also expressed a desire for physical activity to make them taller). The questionnaire opinion statement responses of the British and Kuwaiti boys correlate to this expressed value of physical education. Pre-test 22 British boys strongly agreed with the statement that physical education has a positive effect on health, the number post-test was 16. Pre-test 26 Kuwaiti boys strongly agreed with the statement and post-test the number was 30. The students also strongly disagreed with the statement that 'PE has no influence on my future goals'. Of the Kuwaiti boys pre-test responses 23 students strongly disagreed and seven disagreed with the statement; post-test there were 29 students that strongly disagreed with the statement and eight that disagreed. The British students responses were more varied but were on the whole positive. Pre-test six students strongly disagreed and 11 disagreed with the statement; post-test 13 students strongly disagreed and six disagreed. Negative British pre-test responses to the question were nine strongly agreeing and three agreeing; post-test one student strongly agreed that physical education has no influence on his future and six students agreed. Kuwaiti negative responses to the question were six students

pre-test and post-test strongly agreeing that physical education has no influence on their future; five students pre-test and one student post-test agreed with the statement.

There is a positive attitude on the part of the students toward physical education. The teacher can use this to his advantage. The students often expressed that they preferred theory to be taught in a way which would not hinder their activity time. It is important to remember that we as physical educators are striving to encourage lifetime physical activity, and it is necessary to find the balance between theory and activity. The students indicated that they enjoyed physical education, but why? Through the understanding of theory the students could appreciate and value physical education and extra physical activity, not only for the fun and enjoyment but also for the lifelong benefits it can impart. In the same manner that English teachers strive to elicit a love of reading and literature, to encourage enjoyment and appreciation of such things by the adults of the future, the physical education teacher has a responsibility to teach his students to meet their future adult needs. If physical educators fail to teach students the theory behind physical education they would be as remiss as the English teacher that read stories and plays to the students, instilling a love of literature, but never teaching them to read for themselves. Many students participate in a physical education lesson devoid of educational information, and sadly this concept is accepted by almost all concerned.

While as an educator I sense a lack of expectation in the average physical education lesson, reaction by the students to the health-related curriculum indicated that the students did not want to be formally taught in physical education. There was a sense of surprise on the part of the students that they should have to prepare for the physical education lesson or be tested on information contained in a lesson. While the students indicated they valued physical education, it would seem they also valued the difference in their responsibility between physical education and other courses.

Post-test the attitude scale showed no change in the positive pre-test score. While the students indicated in the interviews that they did not like written work in physical education, the programme did not adversely effect their opinions or attitudes toward physical education.

6.22 British and Kuwaiti Boys Health-related Knowledge Test:

The boys completed a written test covering a variety of aspects of physical activity. The test was divided into five sections with questions pertaining to physical education, health-related fitness, and basic exercise physiology. The complete test can be found in appendix **E**.

The pre-test and post-test results of the health-related knowledge test presented by mean, mode, maximum, minimum, and standard deviation for the British and Kuwaiti boys are presented in table 6.13. Figure 6.7 is a box plot of British and Kuwaiti boys health-related fitness knowledge test results.

Table 6.13 The health-related knowledge test component pre-test and post-test for the two groups.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Mean	4.64	.78	7.52	5.28
Mode	1	0	2	7
Max.	13	7	17	11
Min	1	0	1	0
S	3.31	1.22	3.88	3.12
N	33	50	33	50

The researcher acknowledges that the use of the t-test in this instance is only a rough check between the two groups as the distribution is very skewed. However both values confirm significance, a result clearly shown by figure 6.7.

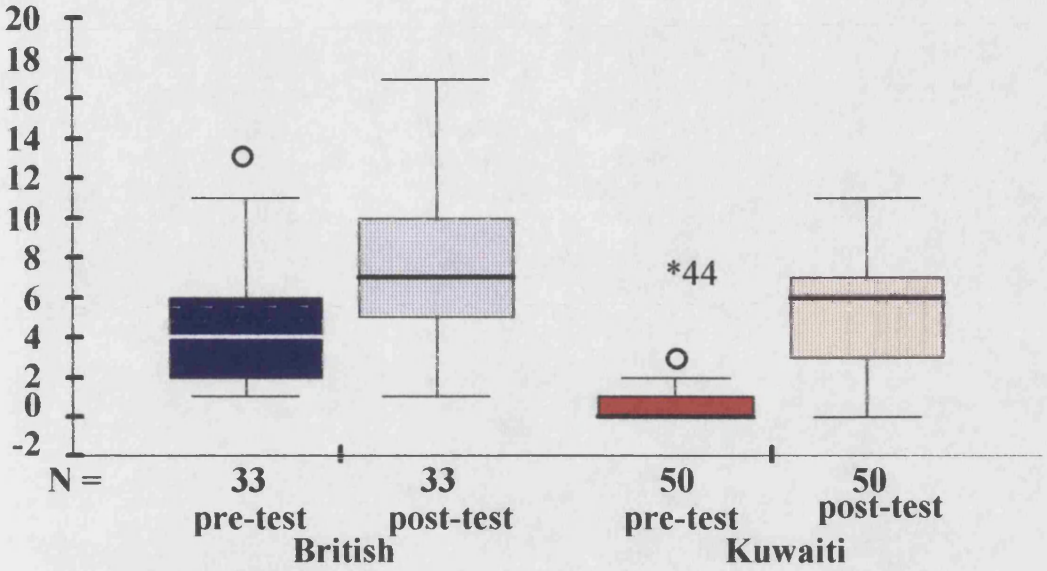


Figure 6.7 British and Kuwaiti boys' knowledge of health-related fitness test results.

The results of the t-test for independent samples of the knowledge of health-related fitness yielded a value of t = 6.42 for the British and Kuwaiti boys at the pre-test; and post-test value of t = 2.77. Therefore there is a significant difference pre-test and post-test between the two groups at the ($p \leq 0$ .05) level. Similarly there is a significant difference between the British boys pre-test and post-test results, the t-test for paired samples yielded a value of t = 5.27; the Kuwaiti boys showed a larger increase between the pre-test and post-test results the t-test for paired samples yielded a value of t = 10.91, please refer to figure 6.7.

The Kuwaiti boys showed the most marked improvement of the two groups. There could be a variety of reasons for this. During interviews with the majority of the boys indicated that this was the first time that they had come in to contact with the information contained in the programme. It could be assumed then that the only direction they could go was up. Also, there is no health education in the Kuwaiti boys curriculum, British boys indicated that they received information on health and physical activity in their health education class, this cross-curricular

information helps to reinforce students knowledge and understanding of a subject (Sparkes & Owen, 1994). The Kuwaiti students were not given the relevant information about physical activity and health in any other course. The physical education teacher thought that the biology teacher could have been expected to teach the boys about the effect of exercise on the body. The Kuwaiti physical education lesson itself did not incorporate any aspect of the health benefits of appropriate activity. The Kuwaiti boys all indicated that they got the majority of their information about physical activity from friends, sports shows on TV or magazines and newspapers, not one student mentioned that they received information in physical education. Conversely, during interviews the British boys said that they did receive information about the potential health benefits of physical activity from their physical education teacher. They felt the physical education teacher thought it was very important that the students be active and have knowledge about the subject.

The pre-test knowledge test scores of the 50 Kuwaiti respondents were extremely low. It was to be expected that the boys would have lower test scores than the British boys due to the lack of information within the physical education lesson as well as the lack of a health education lesson which may introduce the topic of physical activity and health. Only one student got seven of the 17 questions correct. The next highest score of three correct answers, was achieved by two students. Five students got two questions correct and 16 students answered one question correctly. The remaining 26 students did not correctly answer any of the questions. Of this last group of students there were a fair percentage of jokesters. Many of their test sheets were scribbled on, or mock works, country names, or 'hello' and 'good-bye', were written in the answer space. The Kuwaiti students did treat written test in physical education as something of a lark. I do not believe they were trying to insult me personally, they simply never had education/testing in physical education and saw it as a bit bizarre. This is of course understandable considering their background in physical education. It does indicate that it is going to be as

uphill struggle to initiate any changes within the physical education curriculum. Administrators, teachers, students and parents have excepted that physical education is a free period. Changing from the present lesson direction to a informative, instructional lesson, will be met with resistance. After the implementation of the programme in Kuwait I was not entirely sure there would be an improvement on their knowledge test scores. The vast majority of the students made no effort to conceal the fact that they very much disliked being "taught" in physical education and were not very cooperative throughout the programme. The change in the Kuwaiti test scores was actually quite marked, with almost all of the students improving their scores. This was indeed unexpected, the students attitude to the programme ranged from indifferent to slightly hostile. However, while pre-test 26 students were unable to answer one question, post-test this number dropped to three. Of the three students who answered no question correctly, one paper was filled out with mock answers and the other two totally blank paper. Complete results of the Kuwaiti pre-test administration of the knowledge test are presented in figure 6.8.

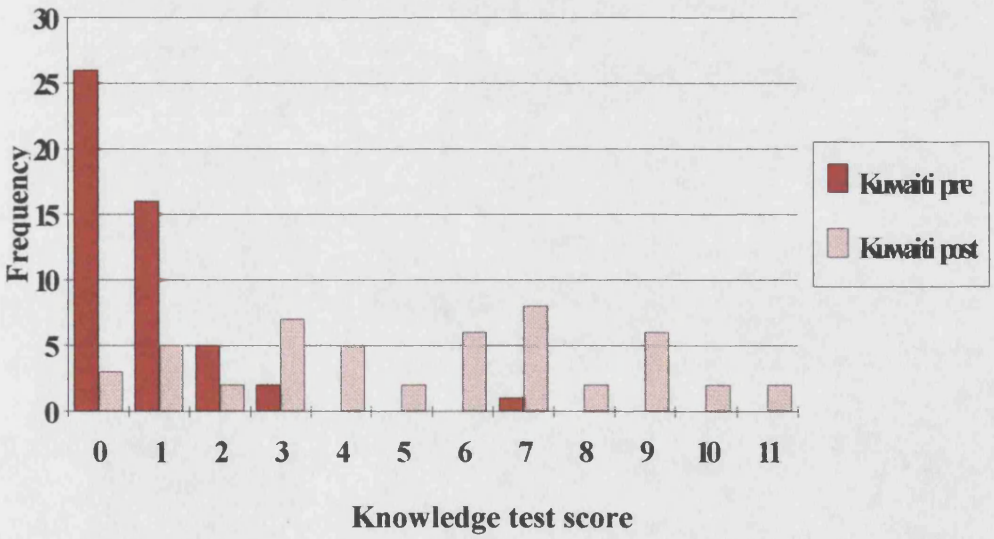


Figure 6.8 Kuwaiti boys pre-test and post-test results of the health-related fitness knowledge test.

The results of this test seem to indicate that the old adage, 'You can lead a horse to water but you can't make him drink', does not strictly apply to education.

Physical educators must remember that we have one foot in the door with the majority of students because they already enjoy physical education. Now, while they may not enjoy formal instruction in the physical education lesson, they do attend, and if they attend they can hear what is being said. The instructional units within the health related physical education curriculum were basic and clear, with handouts that reiterated the day's topic. I was not trying to teach exercise physiology, the lesson consisted of principles of exercise, health, and safety. It is clear that the students heard and retained bits of the information presented in class even though they were not especially enthusiastic. This was indeed one point I was trying to discover, can students benefit from instructional material in physical education. The answer for the Kuwaiti boys seems to be yes. In interviews the boys said that previously they did not receive instruction in physical education. That does not mean, as the Kuwaiti teachers implied, that the students were not able to be taught. They certainly can receive and retain information presented in physical education lessons.

The test results of the British boys were spread more evenly across the range of possible scores. In contrast to the Kuwaiti results, of the 33 British pre-test respondents only one student was unable to answer any of the question correctly. Complete pre-test and post-test results for the British boys on the knowledge test are illustrated in figure 6.9.

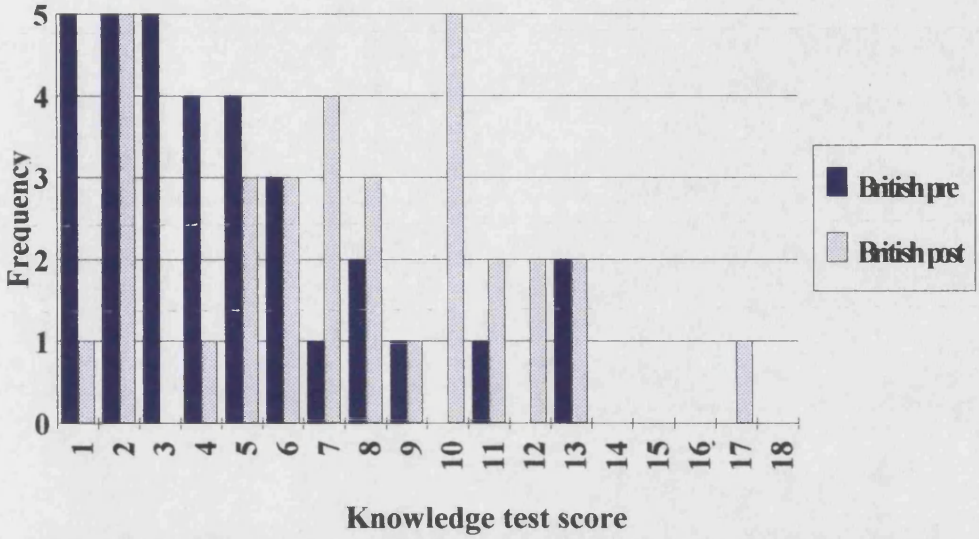


Figure 6.9 British boys pre-test and post-test scores on the health-related fitness knowledge test.

The test areas that showed most improvement for both groups were within definition of terms and the components of appropriate physical activity. No student from either group was able to remember the calculation for target heart rate. Figure 6.10 and figure 6.11 compare knowledge test pre-test and post-test results of the British and Kuwaiti boys respectively.

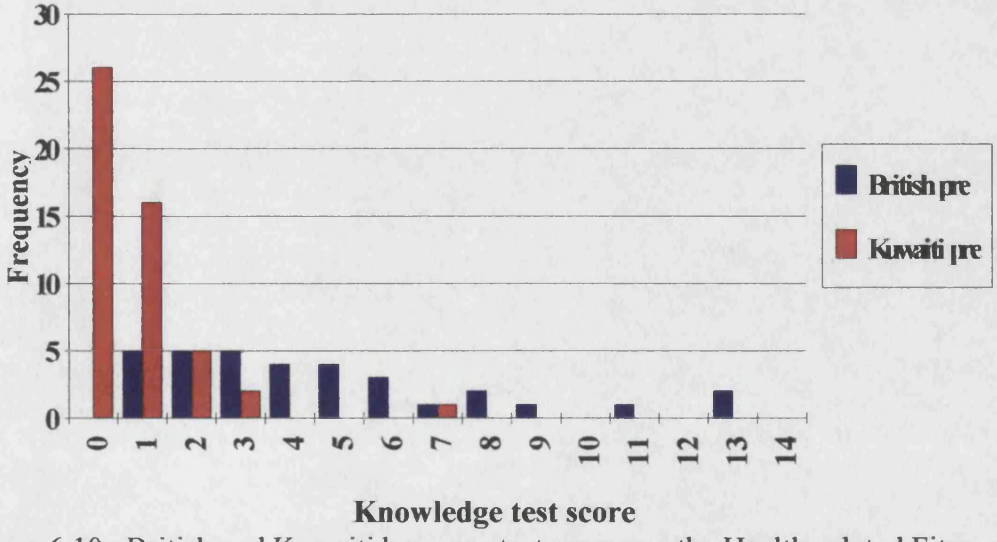


Figure 6.10 British and Kuwaiti boys pre-test scores on the Health-related Fitness knowledge test.

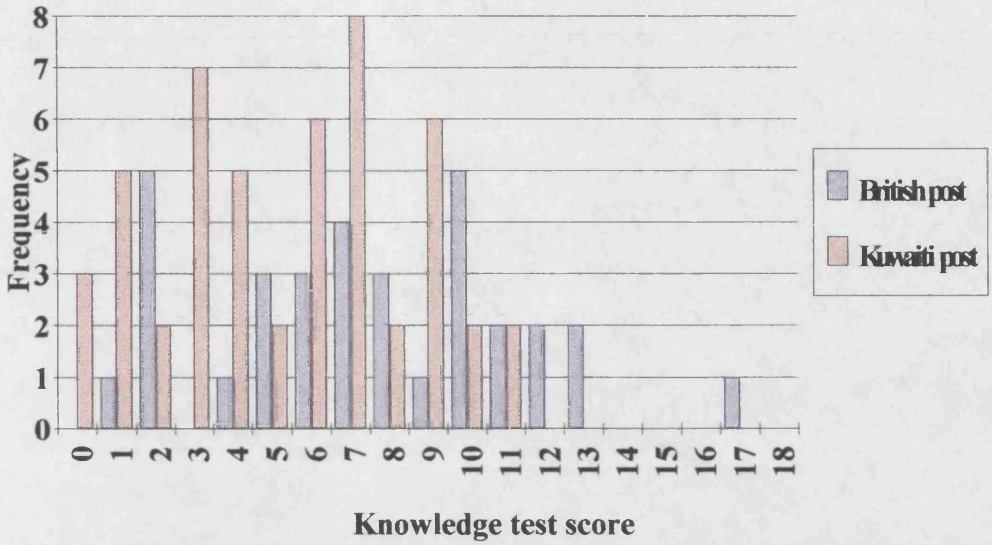


Figure 6.11 British and Kuwaiti boys post-test scores on the health-related fitness knowledge test.

The boys were definitely able to learn even though they didn't seem to want to, one British boy said he really liked the programme but that I should *"lighten up"*. This programme by its very nature had to be intensive, there was a set time limit and the research had to be completed within that time limit. If the programme could have been implemented by the regular teacher, for an entire school year, in five minute units during the lesson, every lesson time, there could possibly have been a greater improvement in the knowledge test scores. Of the Kuwaiti students interviewed at the conclusion of the programme they all said they didn't like to lose too much time in learning the theory behind physical education. They liked the lesson for the fun it could provide, and intensive learning was not what they wanted, especially if it cut into activity time. This feeling was voiced in Britain as well. On several occasions in the UK the physical education lesson was cancelled, and we were forced to double up programme units in order to complete the project by the end of the summer term. During interviews the students said that they wanted to run and be free in physical education and didn't like having to sit still, especially during the double lesson where previously they had been able to play a complete

game, or participate in an activity of some sort. It can be surmised from the Kuwaiti test results that even the most reluctant of students, and I do honestly believe that these Kuwaiti boys were extremely reluctant, can learn in physical education. For a programme to be accepted by the students the information units must be brief so as not to interfere with the students need and desire to be active.

There is much debate about the role of health benefits information in physical education (Jones & Bate, 1990). There are researchers that infer that education within physical education will detract from physical activity in physical education. Woodhouse (1988) states:

> *"...pupils were often sitting down to discuss activity, experiencing batteries of tests that had no logical place and hearing that long runs and press ups were the key to keeping fit (p. 199)."*

It is certainly true that physical education should provide as much physical activity for the students as possible, but it is unfair to presume that physical education should be solely responsible for meeting the students entire physical activity requirement. We are educators not simply trainers or coaches. We must be interested in the mind as well as the body, you do not have one without the other. We can exercise the bodies of our students as much as we like while they are our "captive audience" at school, but what happens when they leave school? We must access the mind of the student which will have sole control over any future physical activity. Knowledge and understanding of the subject may lead to greater acceptance of physical activity in the future. I am not alone in this belief, Charles Corbin professor of Health and Physical Education at Arizona State University is an eminent supporter of physical activity for health. He stipulates that the age of the student makes a difference in the type or course content of physical education. While the primary school age child is unable to deal with the concept that physical activity will help him/her to stay healthy when they are old, teenagers who are at the threshold of adulthood understand many of the responsibilities and changes they

face and are capable of, *"dealing with the abstractions of lifetime fitness"* (Corbin, 1986, p. 84). Corbin (1986) sums up the relationship between the student of physical education and the instructor very succinctly:

> *"Fitness is not something you do to people, it is something that you help them do for themselves (p.83)".*

6.23 British and Kuwaiti Boys Attitude Toward Physical Education and Physical Activity:

Attitude toward physical education and physical activity can seriously affect student participation. Physical activity is, in general not required to get a job or be accepted. There is no stigma attached to inactivity as can be to a lack of education or experience. If you are a 'couch potato' it's all right. It is a persons personal attitude toward physical activity that will have the greatest influence upon his/her participation in physical activity. It was therefore of great interest to ascertain the students attitudes toward physical activity and physical education.

The mean, mode, maximum, minimum, and standard deviation for the British and Kuwaiti boy's attitude scale scores are presented in table 6.14. The pre-test and post-test attitude scale scores for the British and Kuwaiti boys are presented in a box plot in figure 6.12.

Table 6.14 Pre-test and post-test attitude scale scores for the British and Kuwaiti boys.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Mean	149.52	144.16	144.85	135.26
Mode	156	145	136	149
Max.	179	185	179	178
Min	67	91	69	85
S	25.09	19.00	27.96	27.60
N	33	51	33	51

Data as in table 6.14.

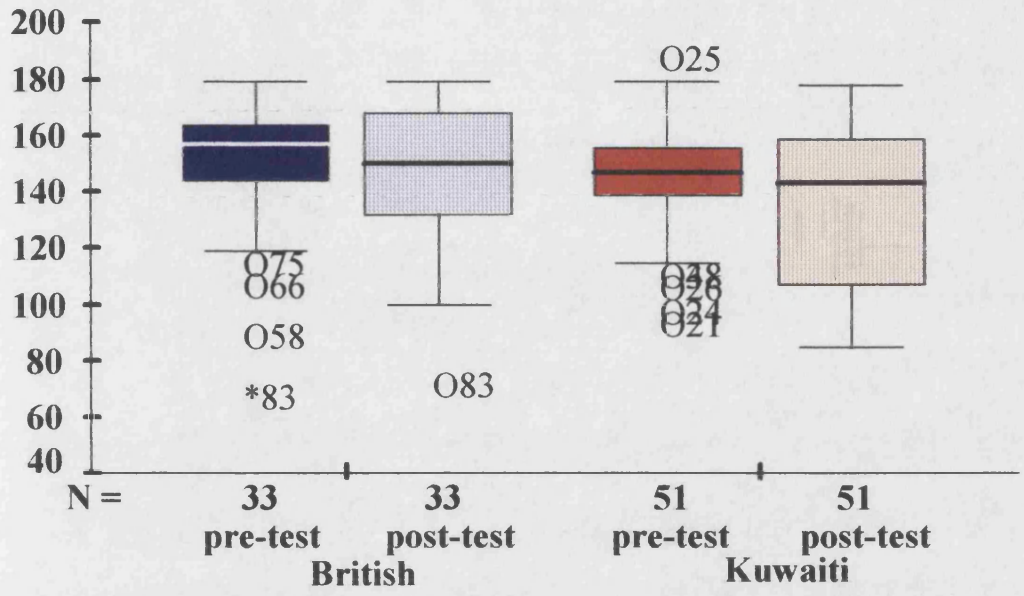


Figure 6.12 The British and Kuwaiti boys attitude toward PE and physical activity.

There was no significant difference between the pre-test and post-test for the British and Kuwaiti boys' attitudes toward PE and physical activity. Similarly there was no significant difference between the British pre-test and post-test. There was however a significant difference between the Kuwaiti pre-test and post-test $t = 2.90$, at the ($p \leq 0.05$) level; refer to figure 6.12. Pre-test and post-test pattern of responses of both groups of students to each statement of the attitude scale are represented in line graphs in figures 6.13 through 6.32.

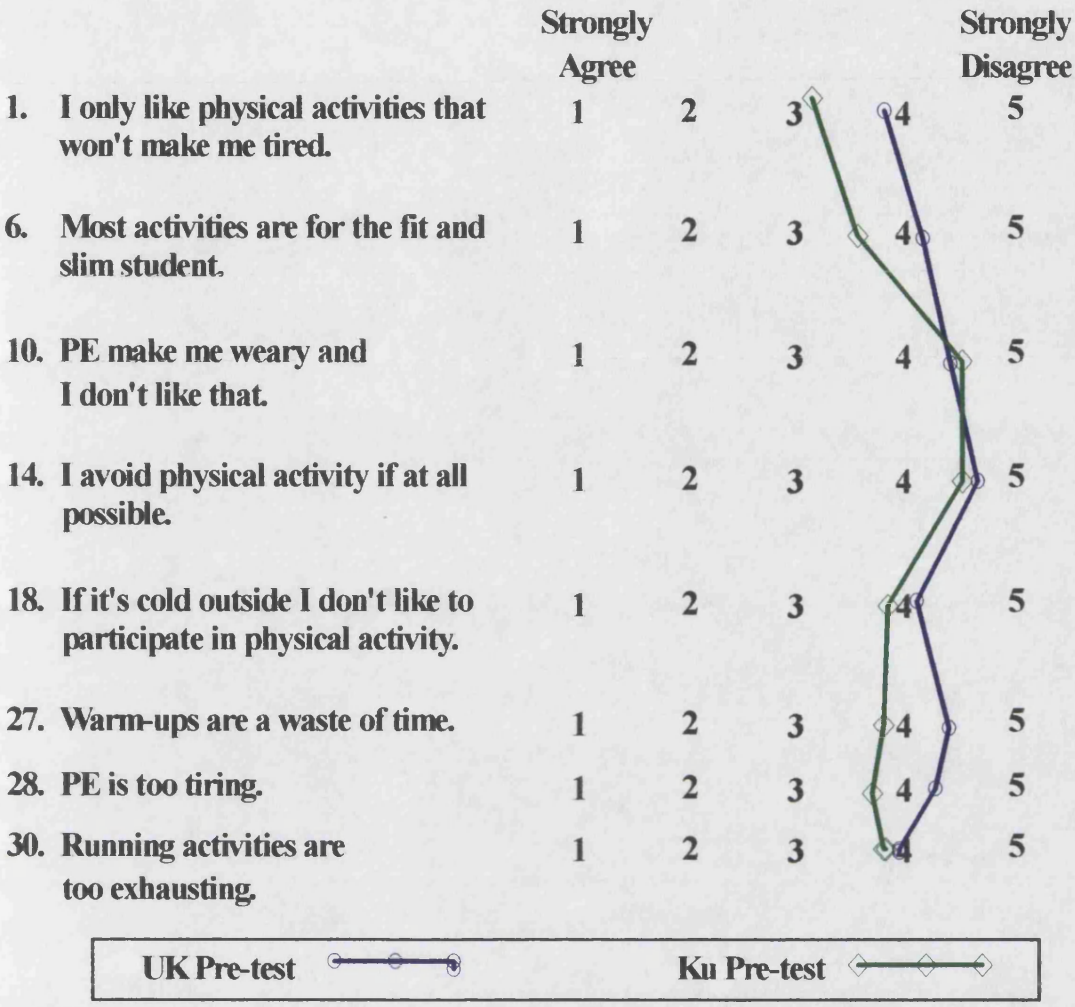


Figure 6.13 Attitude scale pre-test: negative physical statements of the British and Kuwaiti boys.

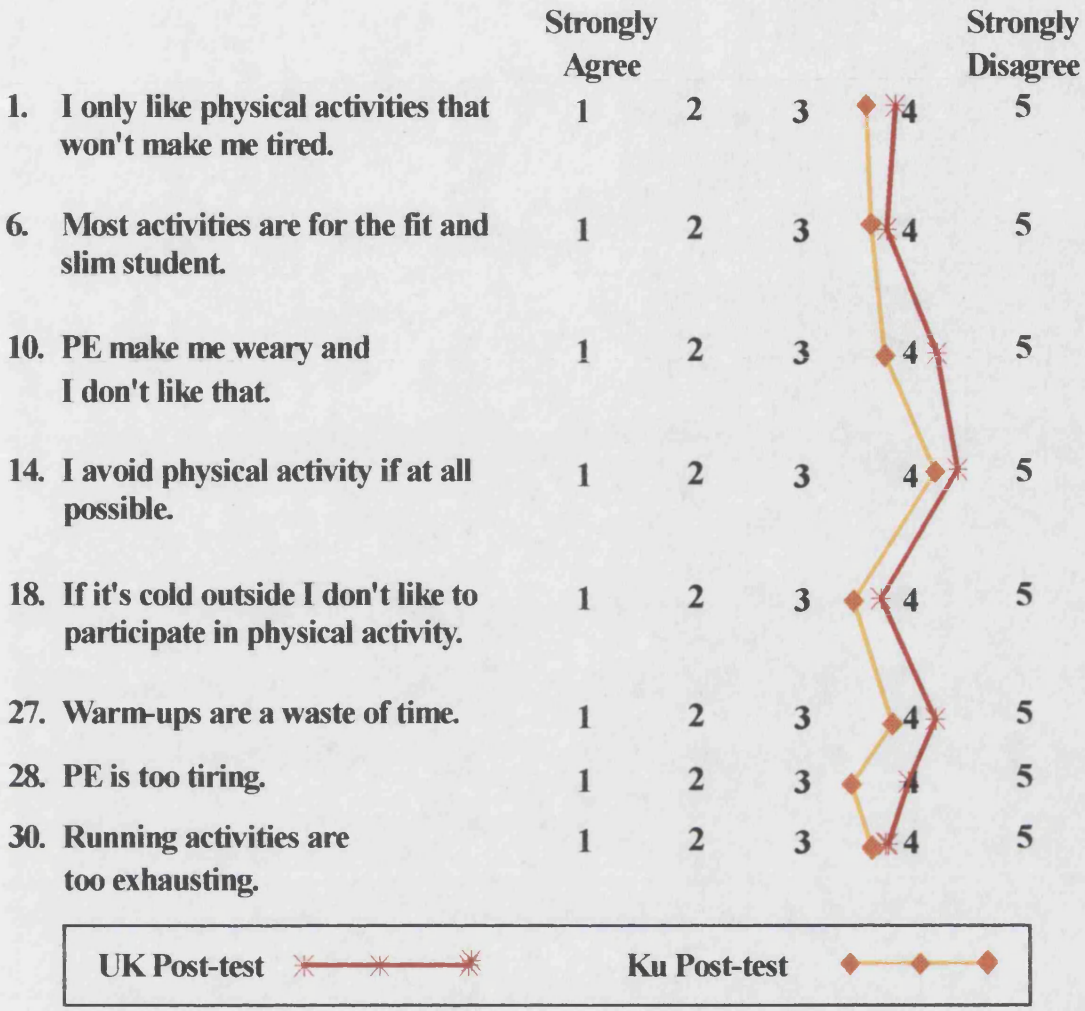


Figure 6.14 Attitude scale post-test: negative physical statements of the British and Kuwaiti boys.

The attitude scale questions were divided into positive and negative statements about physical activity and physical education. They questioned physical, psychological, and leisure time issues. Figures 6.13 and 6.14 clearly illustrate strongly negative responses to negative statements. Both the British and Kuwaiti boys responses pre-test and post-test disagreed with negative statements regarding physical aspects of physical education or physical activity in general. This is a very encouraging response. Although there was no significant change toward "strongly disagreeing" with negative statements the students were not adversely affected by the extra activities incorporated into the lesson.

Surprising to the researcher was the fact that the attitude scale revealed the Kuwaiti boys had a very positive attitude toward physical education and physical activity. This attitude however was not overly evident in the class. The boys would often complain about the extra activity and they especially disliked the one mile walk/run, however in the pre-test and post-test responses the boys disagreed with the statement, "Running activities are too exhausting". It is difficult to understand the disparity of these responses.

The British boys were also disagreeing with statements which seemed to be somewhat opposite of their actions in the class. The boys were against holding physical education outdoors when it was rainy, cold, or windy, and often complained about it. Yet, on the attitude scale the UK respondents disagreed with the statement, "If it's cold outside I don't like to participate in physical activity". Why there is this disagreement between actions within the lesson and responses on the attitude scale is hard to know. It is also hard to ascertain the effect of the programme may have had on the students attitude toward physical activity and physical education, there was no significant difference between the British groups pre-test and post-test results and there was only a small but significant deterioration for the Kuwaiti group. There was however, no individual student in either group who indicated a drastic shift in attitude. It is assumed therefore that the programme did not affect the students adversely to any great extent , and may have been instrumental in imparting some knowledge that will have a positive effect in the future. Sometimes it is necessary for students to be made to engage in activities that they might not necessarily enjoy, but are essential for them to learn for their future benefit.

Figure 6.15 through figure 6.32, are the remaining pre-test and post-test attitude scale questions with the responses of both the British and Kuwaiti boys responses. All responses are virtually parallel. The Kuwaiti boy did indicate a significant change on one question of considerable importance. On the negative psychological statement, "PE is simply not as important as other subjects at school",

the Kuwaiti boys shifted slightly from agreeing with this statement to neutral, undecided about this statement. It is possible that the programme made students a little more aware. While they did not disagree with the statement they were no longer agreeing with it which is a positive step.

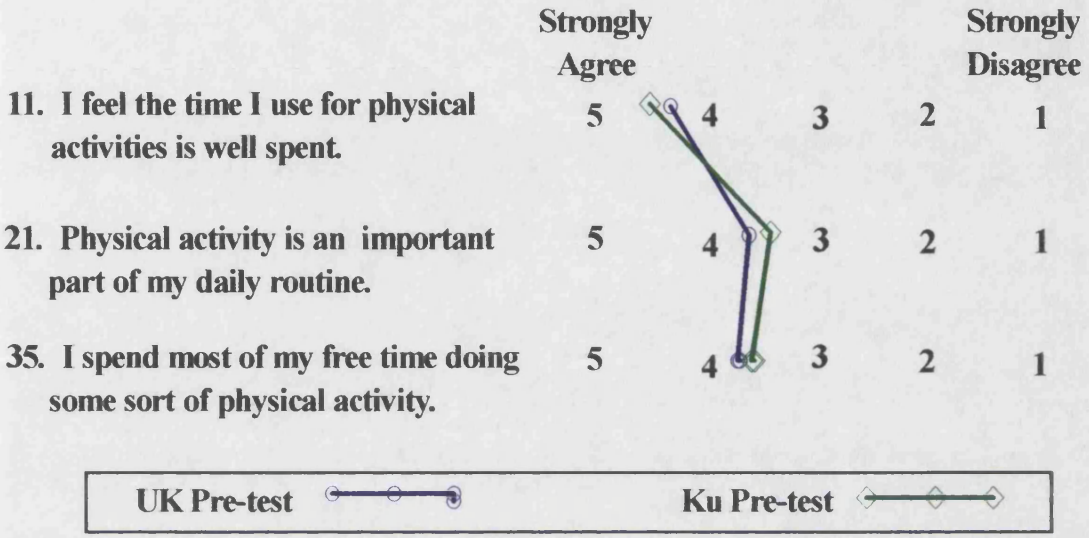


Figure 6.15 Attitude scale pre-test: positive leisure time statements of the British and Kuwaiti boys.

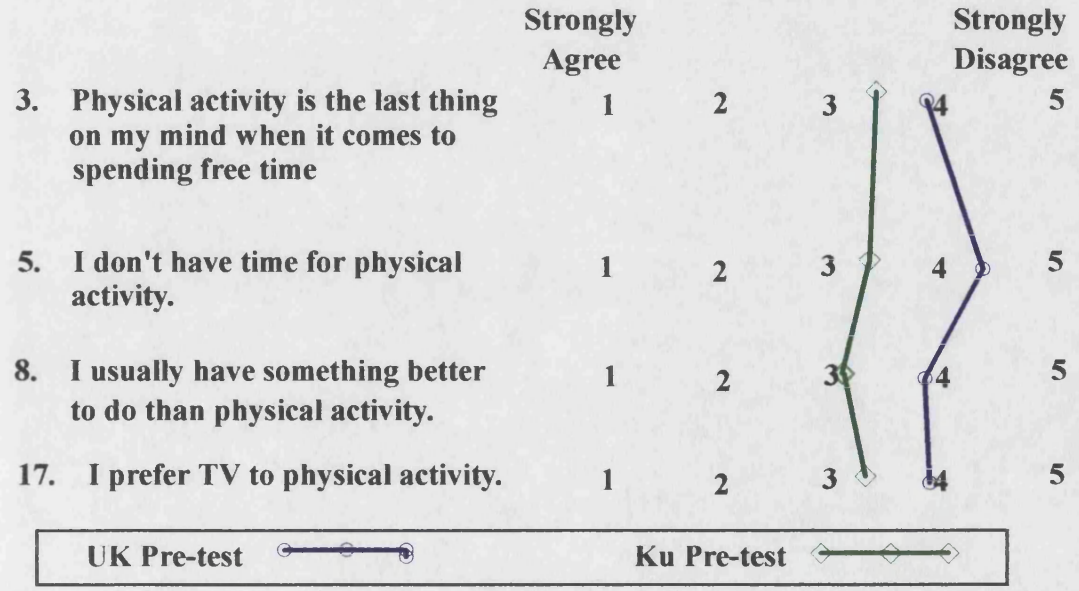


Figure 6.16 Attitude scale pre-test: negative leisure time statements of the British and Kuwaiti boys.

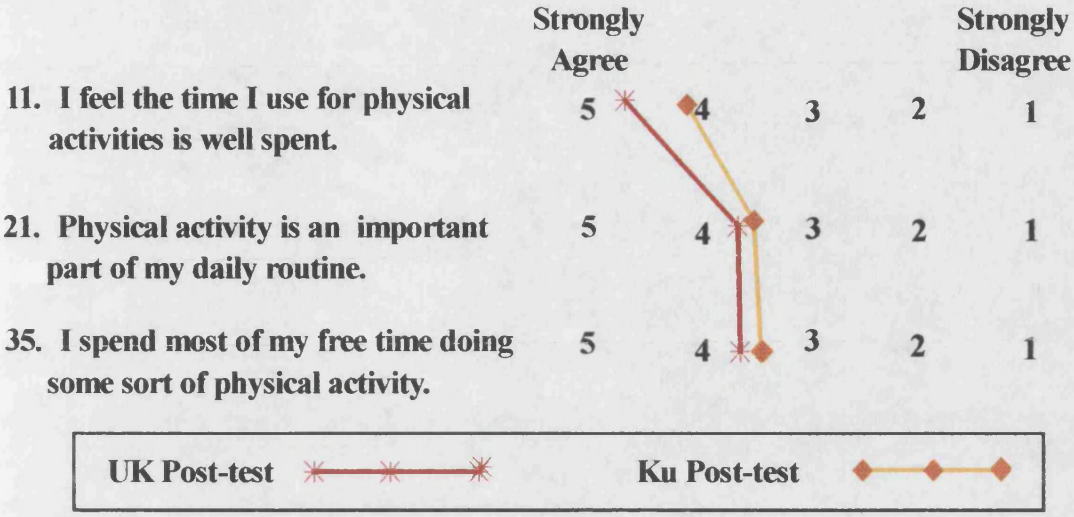


Figure 6.17 Attitude scale post-test: positive leisure time statements of the British and Kuwaiti boys.

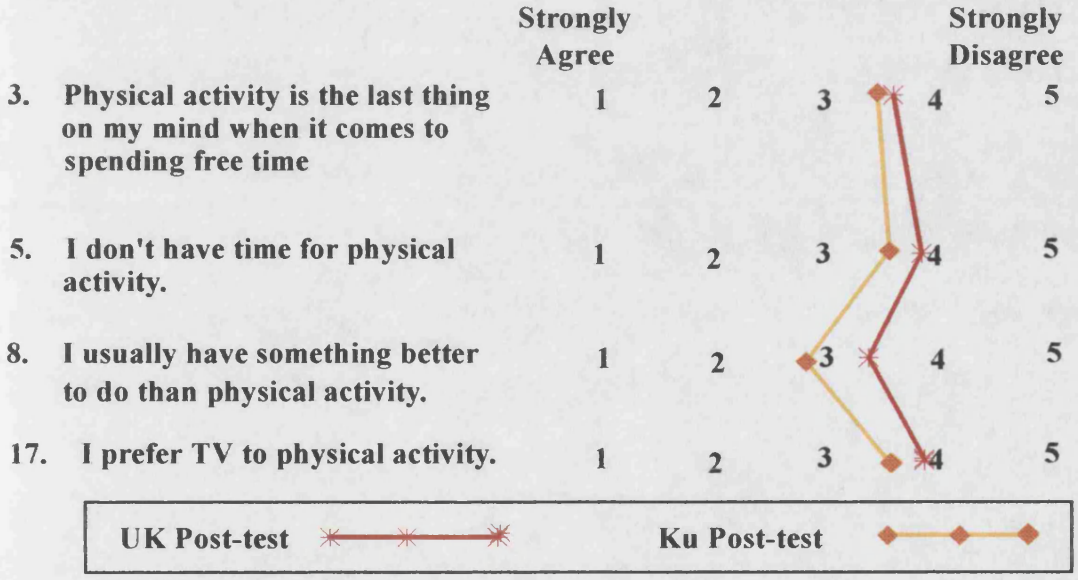


Figure 6.18 Attitude scale post-test: negative leisure time statements of the British and Kuwaiti boys.

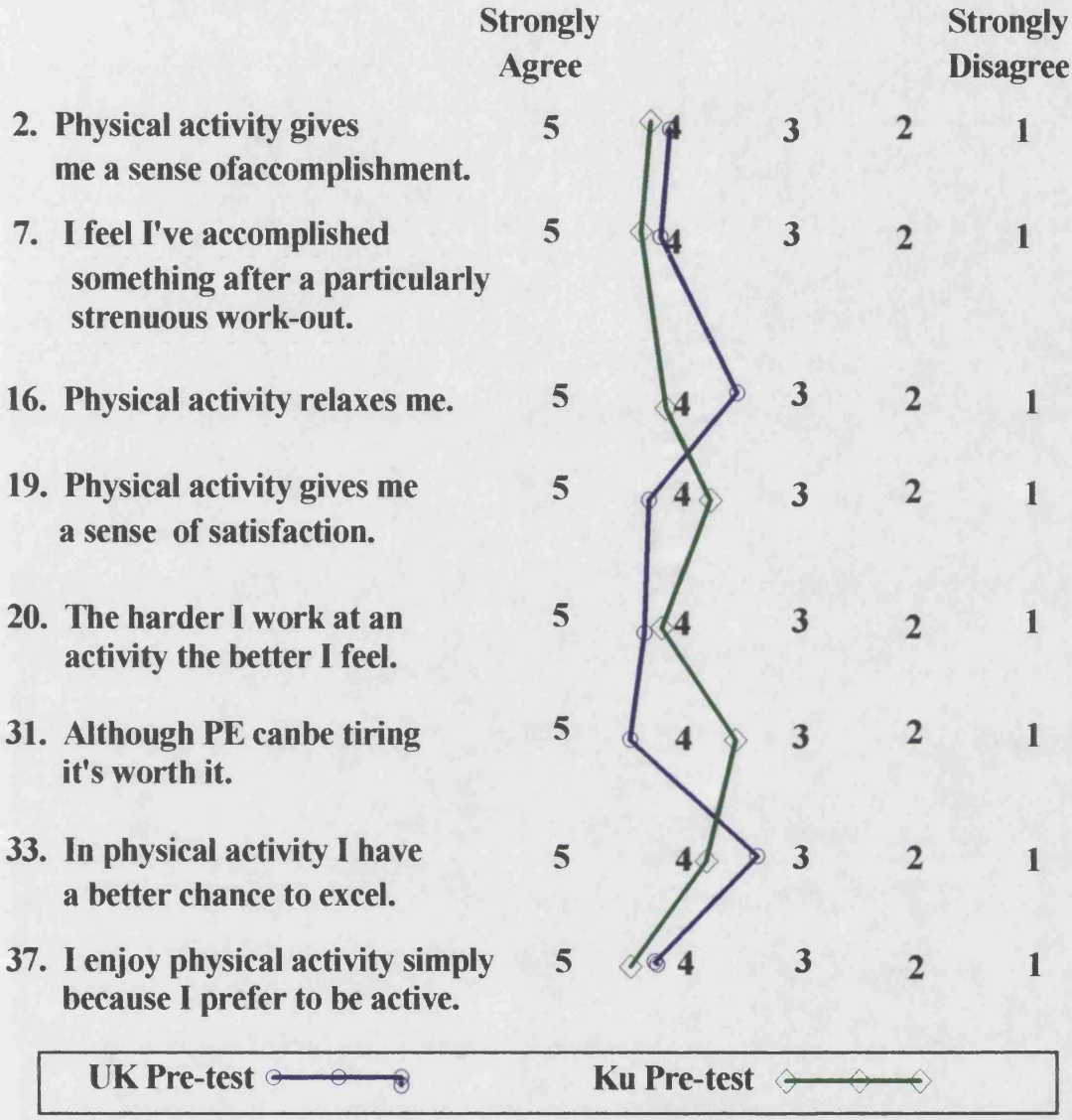


Figure 6.19 Attitude scale pre-test: positive psychological statements of the British and Kuwaiti boys.

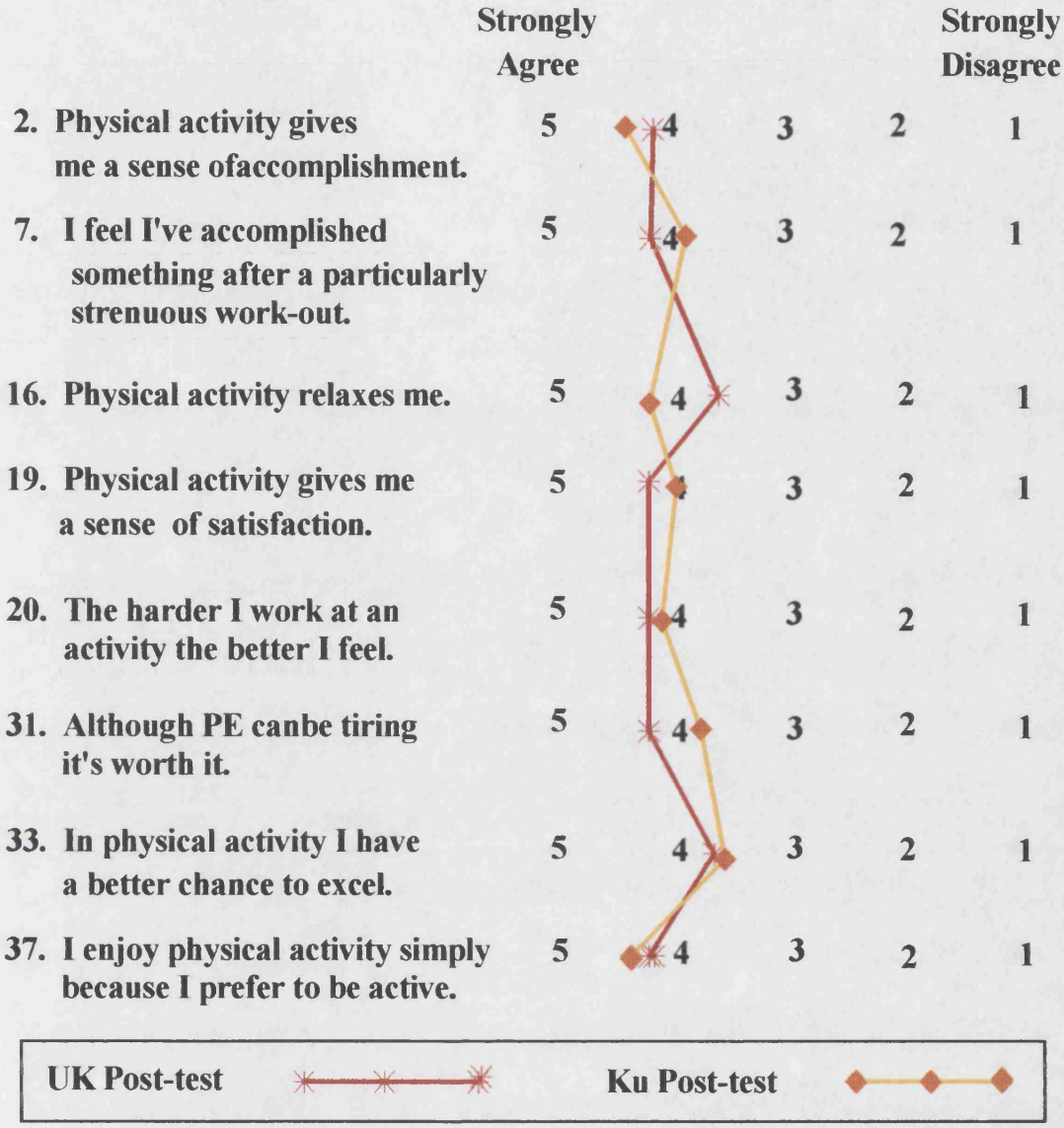


Figure 6.20 Attitude scale post-test: positive psychological statements of the British and Kuwaiti boys.

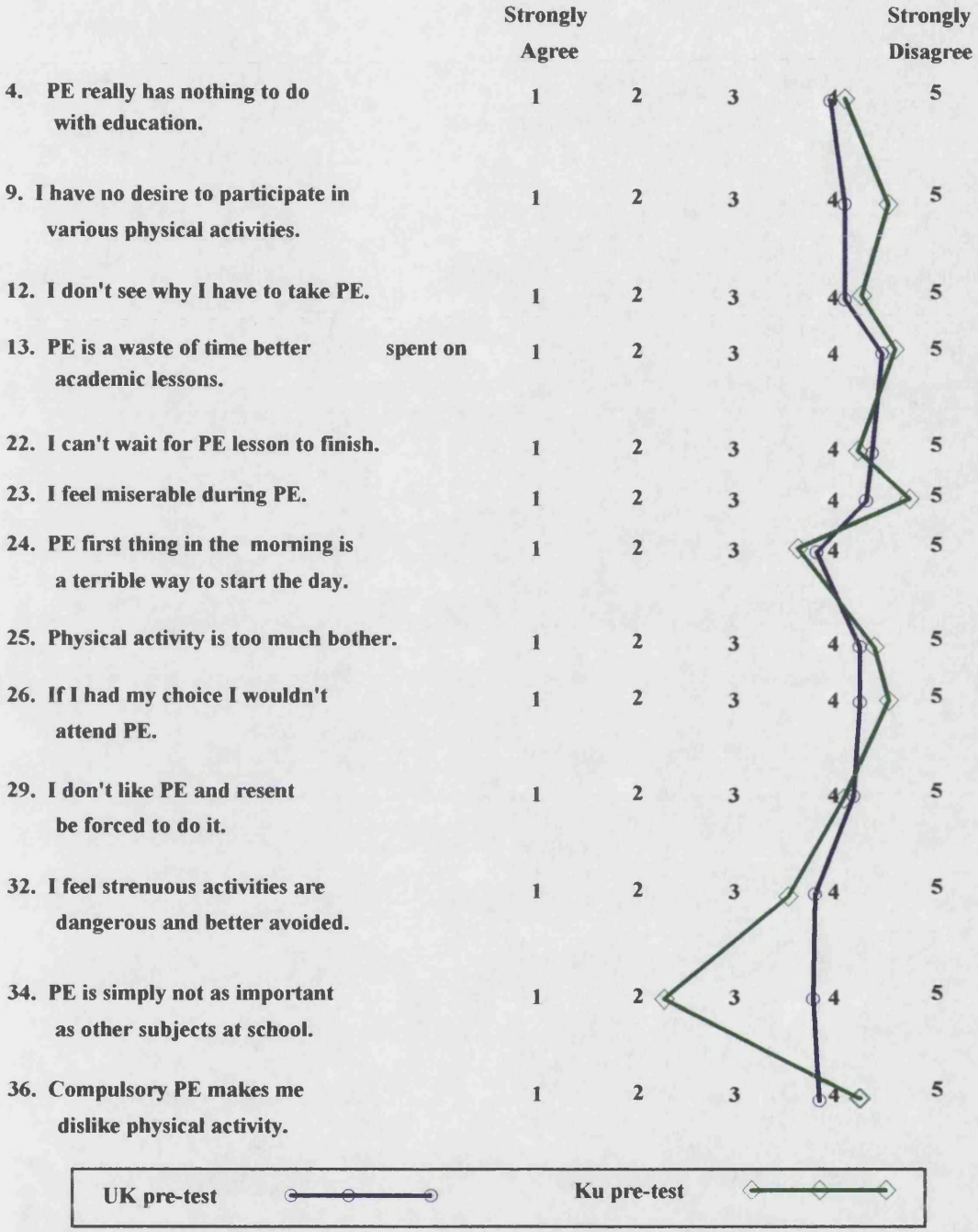


Figure 6.21 Attitude scale pre-test: negative psychological statements of the British and Kuwaiti boys.

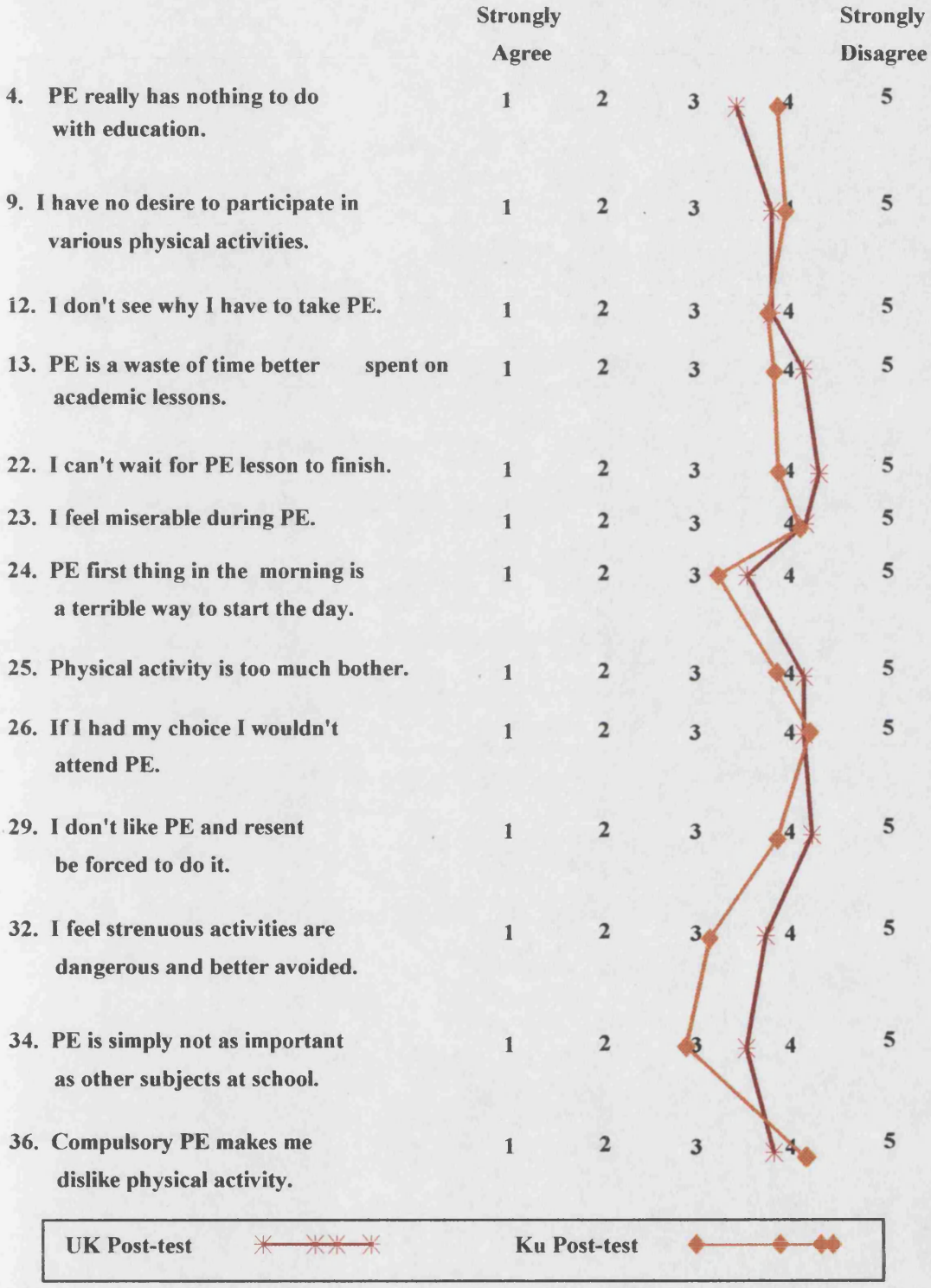


Figure 6.22 Attitude scale post-test: negative psychological statements of the British and Kuwaiti boys.

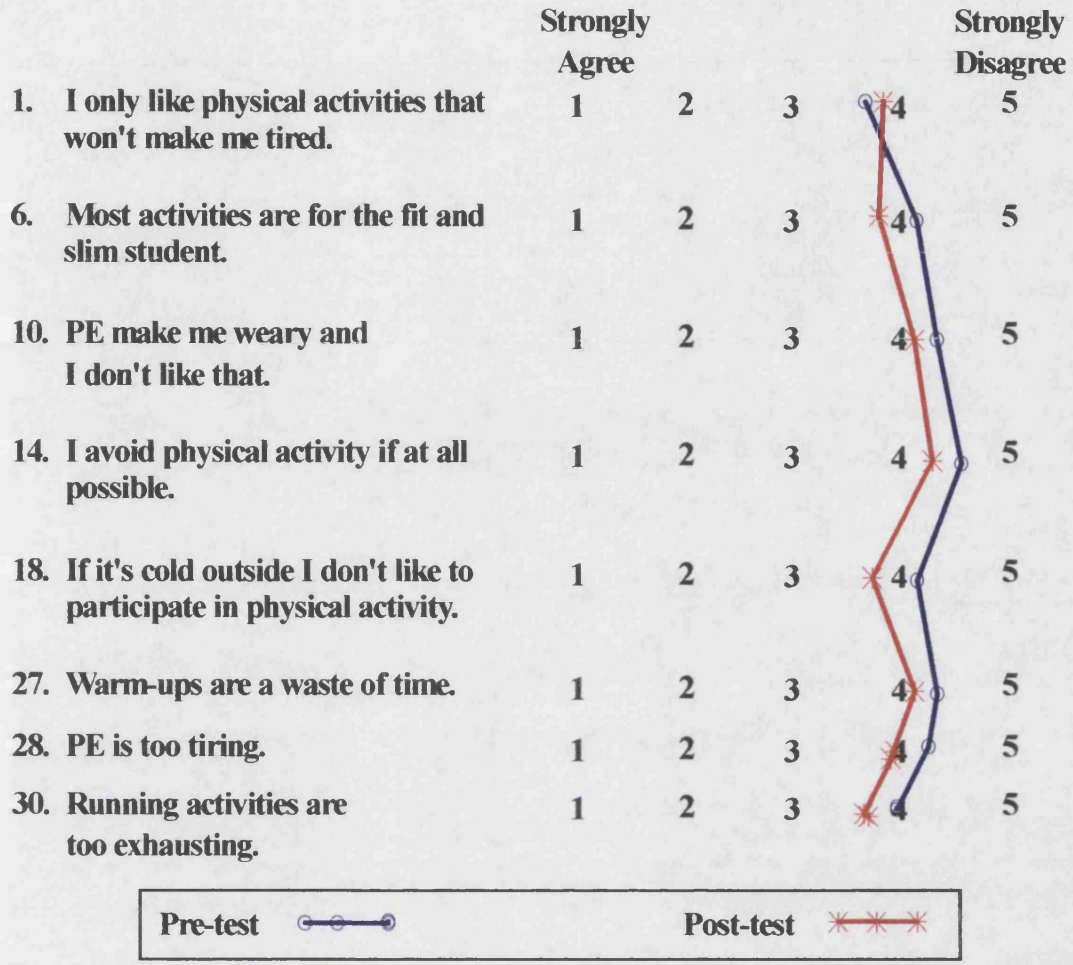


Figure 6.23 Attitude scale: pre-test and post-test negative physical statements of the British boys.

Results of these statements revealed that most of the post-test responses were more negative toward physical activity than they were pre-test, but the variation was not great. This slight shift in attitude could be due to the greater constaints placed upon activity time during the implementation of the programme and do not appear to be a cause for great concern.

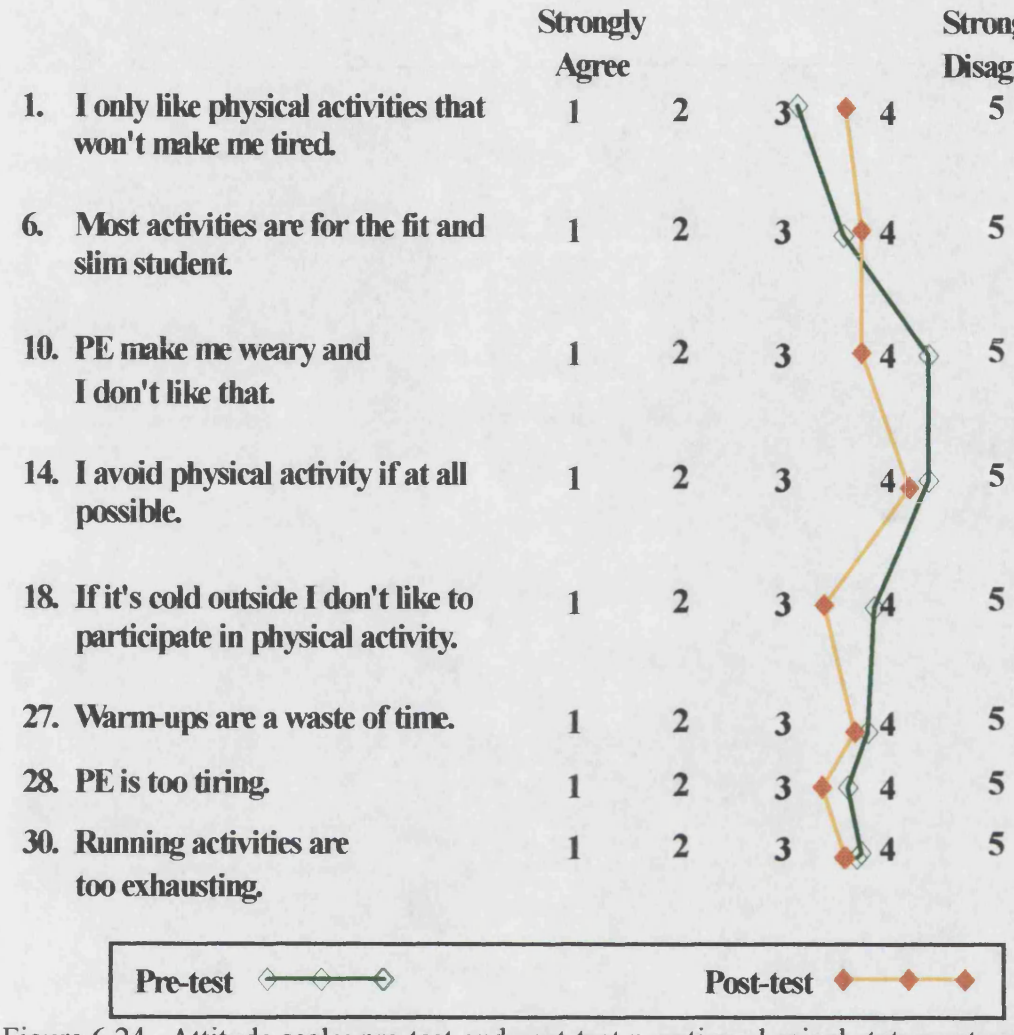


Figure 6.24 Attitude scale: pre-test and post-test negative physical statements of the Kuwaiti boys.

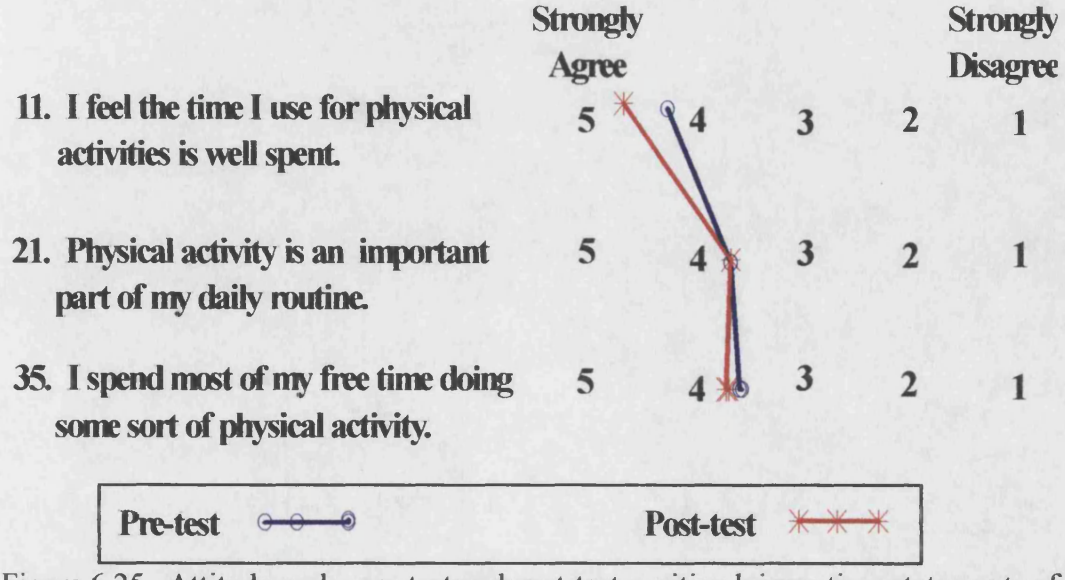


Figure 6.25 Attitude scale: pre-test and post-test positive leisure time statements of the British boys.

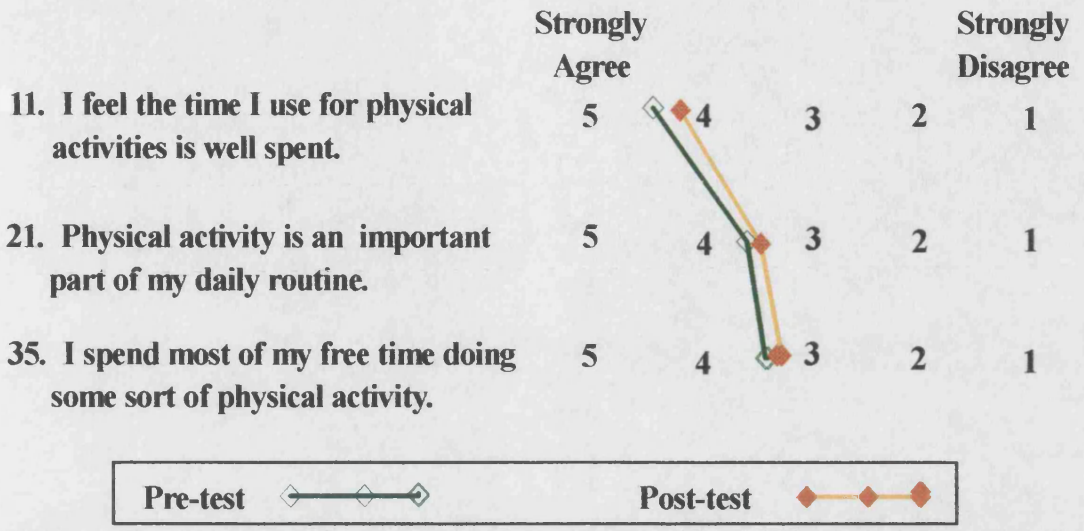


Figure 6.26 Attitude scale: pre-test and post-test positive leisure time statements of the Kuwaiti boys.

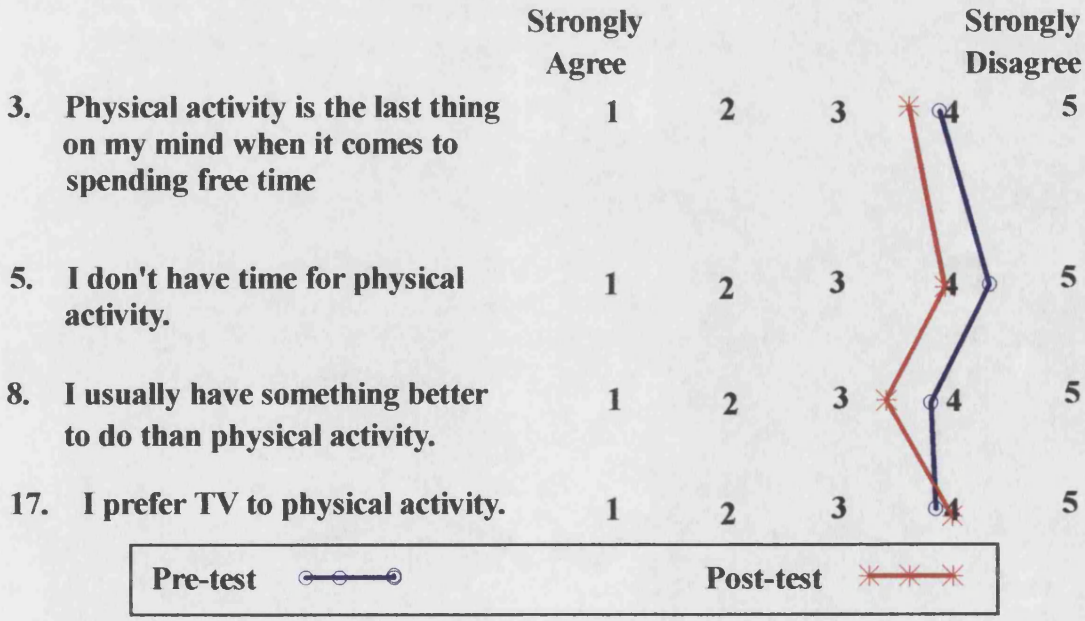


Figure 6.27 Attitude scale: pre-test and post-test negative leisure time statements of the British boys.

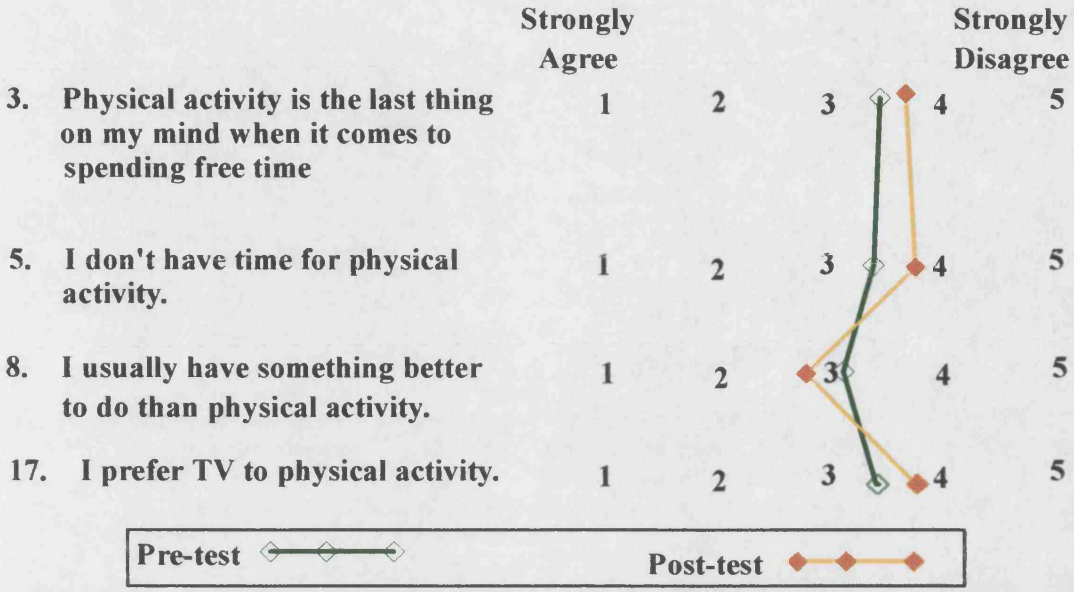


Figure 6.28 Attitude scale: pre-test and post-test negative leisure time statements of the Kuwaiti boys.

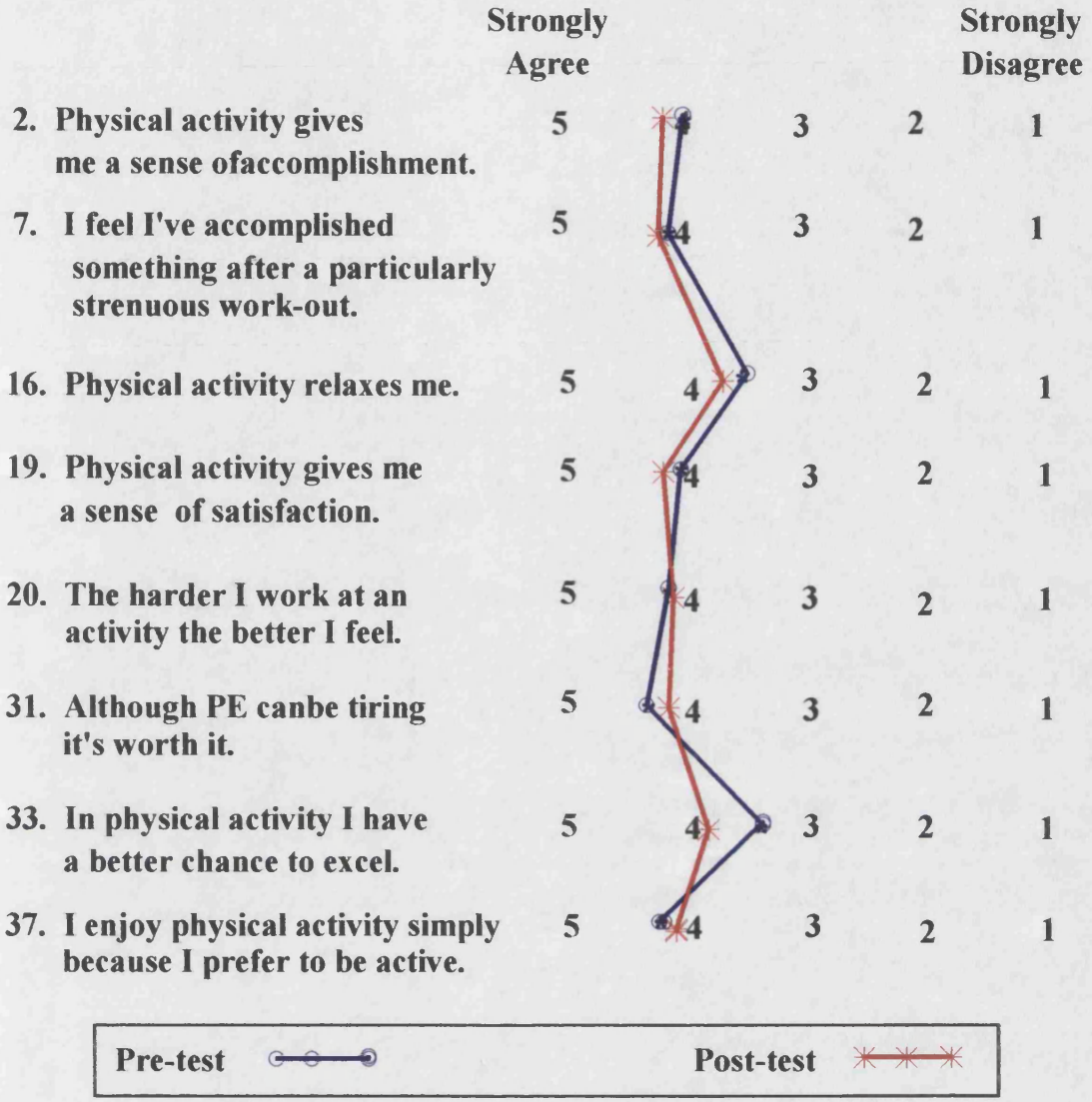


Figure 6.29 Attitude scale: pre-test and post-test positive psychological statements of the British boys.

Psychological positive statements of the Attitude scale for the Kuwaiti Boys:

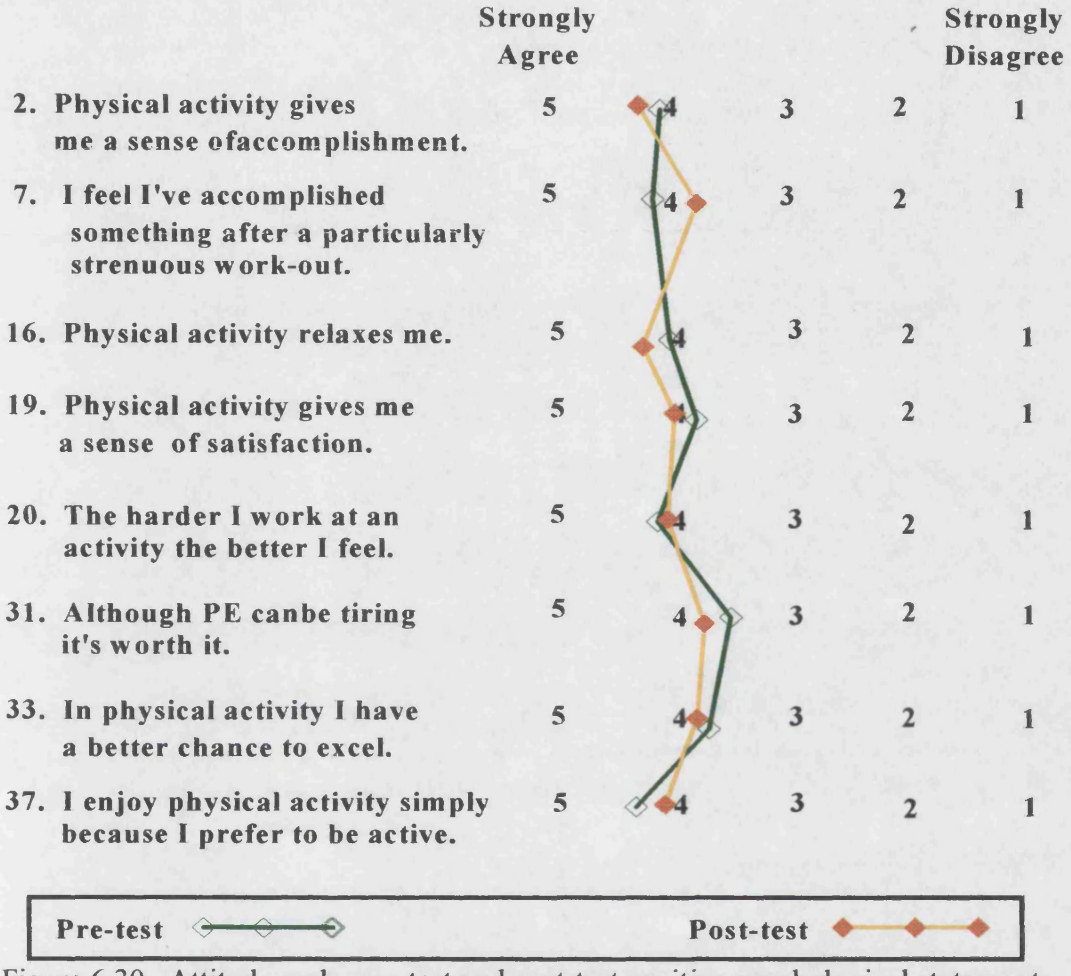


Figure 6.30 Attitude scale: pre-test and post-test positive psychological statements of the Kuwaiti boys.

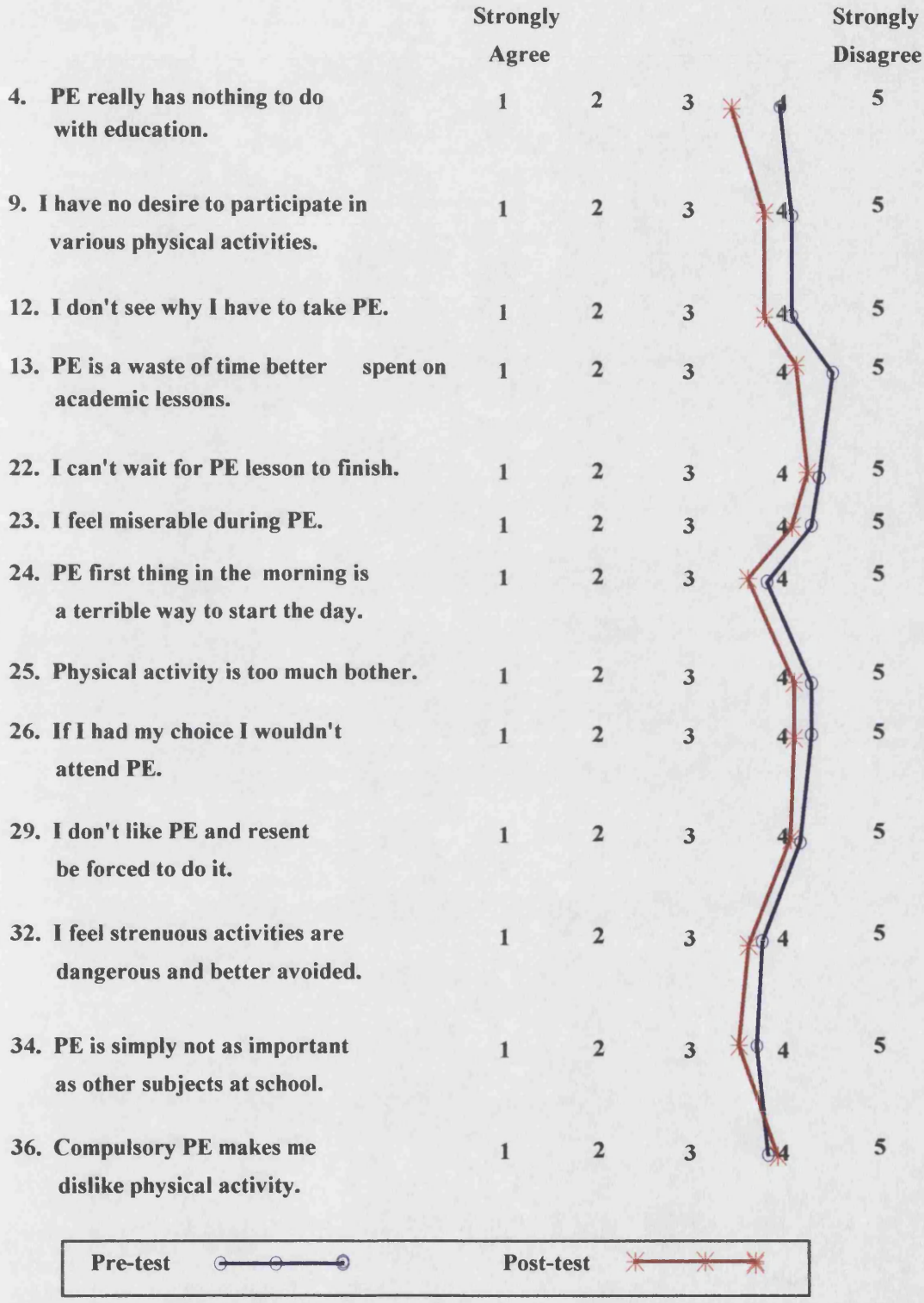


Figure 6.31 Attitude scale: pre-test and post-test negative psychological statements of the British boys.

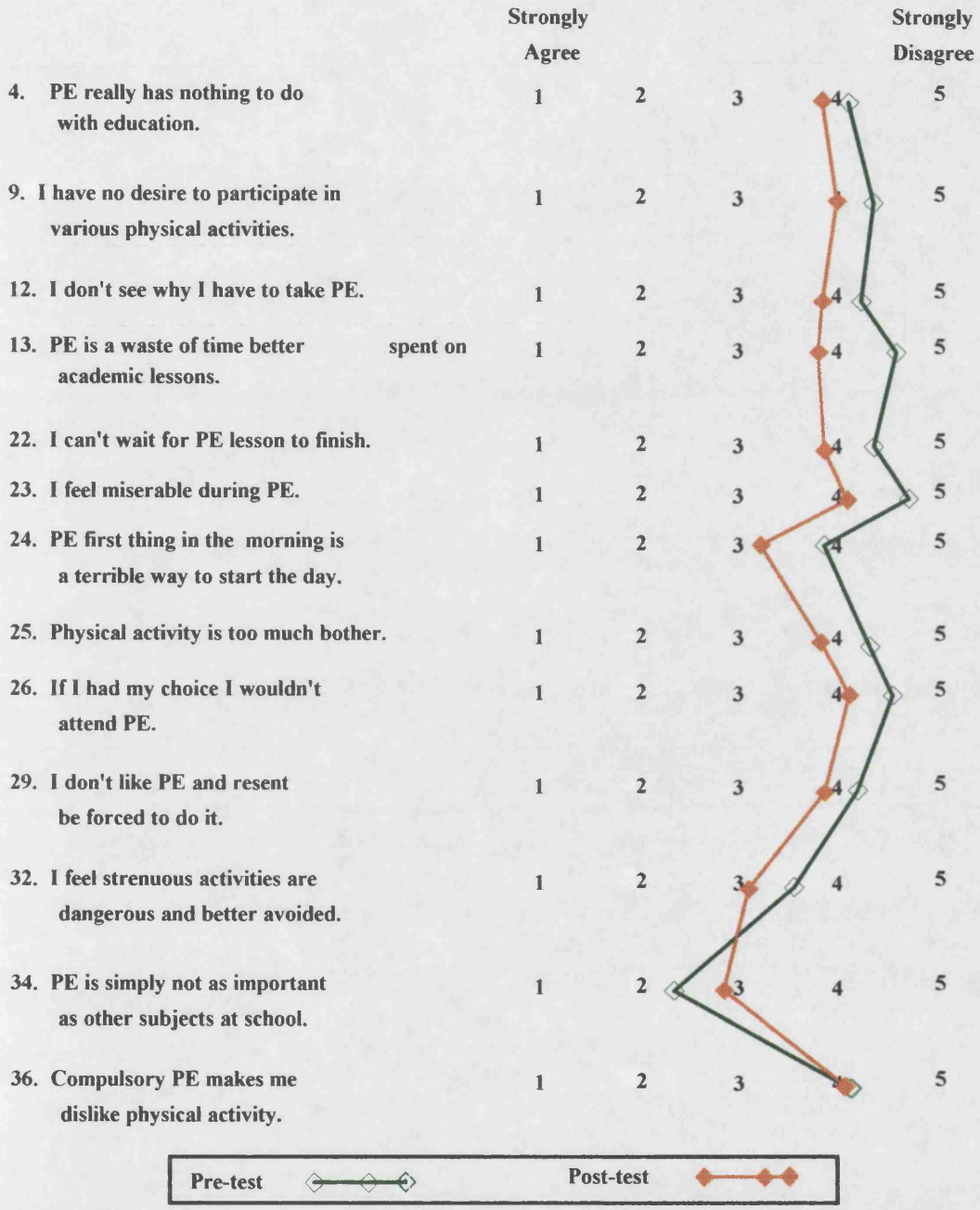


Figure 6.32 Attitude scale: pre-test and post-test negative psychological statements of the Kuwaiti boys.

Nearly all post-test responses indicate a negative change in the attitude of the Kuwaiti boys, these changes may have been influenced by the testing procedures and constraints on students during the intervention period rather than their basic attitude to physical activity which it is still high.

6.24 Results of the AAHPERD Health-related Fitness Test for the British and Kuwaiti Boys:

The following are the pre-test and post-test results of the health-related fitness test for the British and Kuwaiti boys.

6.24.1 The British and Kuwaiti Boys' One Mile Walk / Run:

Table 6.15 represents the British and Kuwaiti boys mean, mode, maximum, minimum, standard deviation, and number of participants in the one mile walk/run, time in minutes and seconds. Figure 6.33 is the box plot pre-test and the post-test of the British and Kuwaiti boys one mile walk/run results.

Table 6.15 The British and Kuwaiti boy's one mile walk/run test results in minutes and seconds.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Mean	8:0	10:55	7:24	9:42
Mode	7:10	11:30	12:05	10:19
Max.	13:13	18:02	12:05	15:44
Min	5:58	7:20	5:23	6:33
S	1:39	2:30	1:33	2:29
N	28	32	28	32

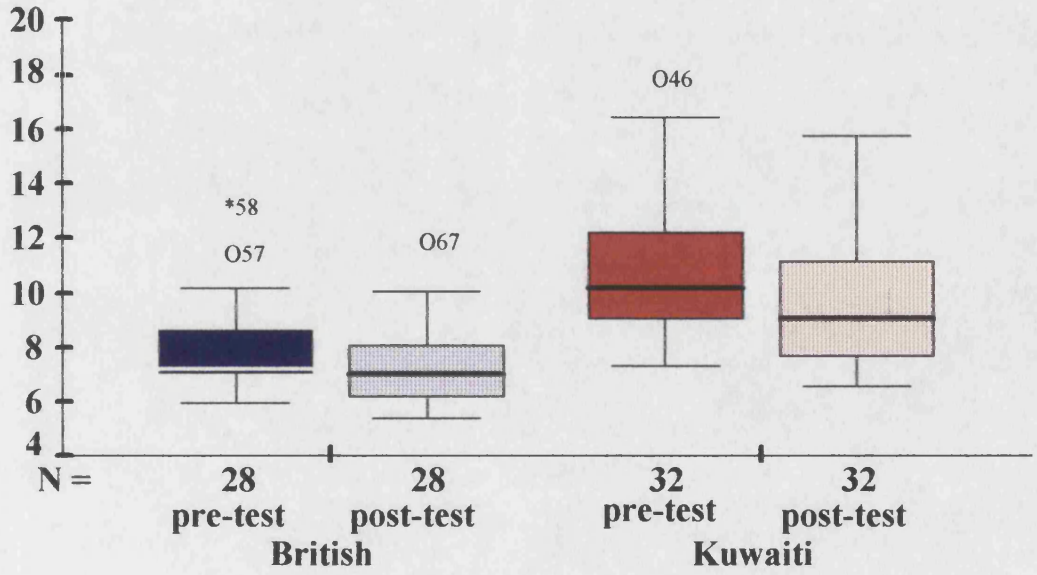


Figure 6.33 The one mile walk/run for the British and Kuwaiti boys.

The t-test for independent samples of the British and Kuwaiti boys one mile walk/run yielded a value of $t = 5.40$ pre-test and a value of $t = 4.34$ post-test. There is a significant difference between the two groups pre-test and post-test results. The preliminary study results for this test similarly revealed that the British boys were able to complete the one mile walk/run in less time than the Kuwaiti boys. The t-test for paired samples of the British boys pre- and post-test yielded a value of 2.68; the Kuwaiti boys pre- and post-test $t = 3.19$. Therefore there is a significant difference between the British boys pre-test and post-test results, as well as the Kuwaiti boys pre-test and post-test results, at the ($p \leq 0.05$) level, refer to figure 6.33.

The walk/run test was administered on a soccer field adjacent to the school. A lap of 400 meters was measured off and students were required to complete four laps. This way there was a minimum of lap counting which is recommended by the AAHPERD Test Manual (1980) instructions. The walk/run test is used to evaluate cardio respiratory endurance. Research has documented that heart disease risk factors such as obesity and elevated blood pressure can be reduced by exercise of the proper duration and intensity (PCPFS, 1986).

Both groups showed significant improvement on the test results post-test. The British result was down one full minute on their pre-test mean score. Additionally the British boys cut almost one minute off their maximum score, and half a minute off the minimum score. The Kuwaiti results were equally positive, two minutes and a quarter were off the maximum test result and one minute off the minimum result.

The results indicate that the programme was able to effect significant change in the students one mile walk/run test score, thereby promoting cardiovascular fitness. The short duration of the programme indicates that these results would probably be due to the maturation of the students.

6.24.2 The British and Kuwaiti Boys Sit and Reach Test Results:

The mean, mode, maximum, minimum, standard deviation in cm, and number of participants for the sit-and-reach test component are indicated in table 6.16. Figure 6.34 is the box plot of pre-test and the post-test for the British and Kuwaiti boys' sit and reach test.

Table 6.16 British and Kuwaiti boys sit-and-reach test results in cm.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Mean	22.25	21.62	25.11	21.24
Mode	17	20	29	15
Max.	40	42	45	43
Min	12	1	14	3
S	7.76	9.66	8.10	9.21
N	28	50	28	50

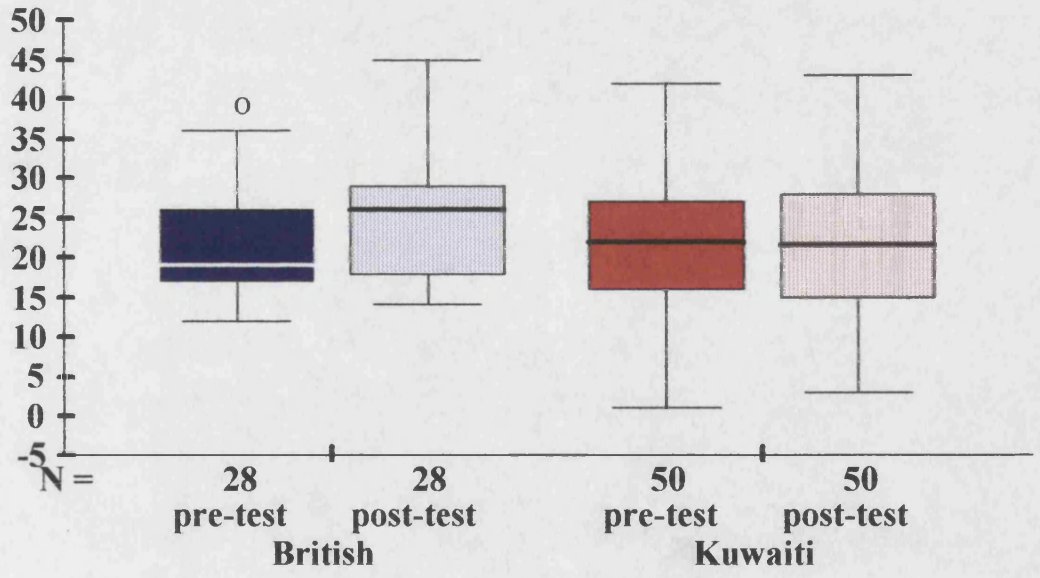


Figure 6.34 The British and Kuwaiti boys sit and reach test results.

The results of the t-test for independent samples of the sit-and-reach fitness test for the British and Kuwaiti boys indicated no significant difference between the pre-test and post-test for the two groups. There was no significant difference

between the two groups in the preliminary study findings for the sit and reach test between the British and Kuwaiti boys. The t-test for the British boys pre- and post-test have a value of $t = 3.53$; there is a significant difference between the British pre-test and post-test, conversely there is no significant difference between the Kuwaiti boys pre-test and post-test, at the ($p \leq 0.05$) level, please refer to figure 6.34.

The test results for the sit and reach test component indicated no significant difference in the Kuwaiti boys test results but did indicate a significant difference for the British boys. While improvement did occur during the implementation of the health-related curriculum, the programme also fell with the UK groups most active extra curricular physical activity time as indicated in the questionnaires. It is impossible to ascertain whether this improvement was due to the programme or the effects of outside training or a combination of both.

6.24.3 The British and Kuwaiti Boys One Minute Timed Sit-ups:

The mean, mode, maximum, minimum, standard deviation, and number of participants for the one minute timed sit-ups fitness test component for both groups are presented in table 6.17. Figure 6.35 represents the pre-test and the post-test results for the British and Kuwaiti boys one minute timed sit-up test.

Table 6.17 British and Kuwaiti boys one minute timed sit-up test results.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Mean	41.71	30.08	46.46	30.48
Mode	40	25	48	17
Max.	57	60	59	57
Min	33	0	31	3
S	6.03	12.36	6.86	13.21
N	28	50	28	50

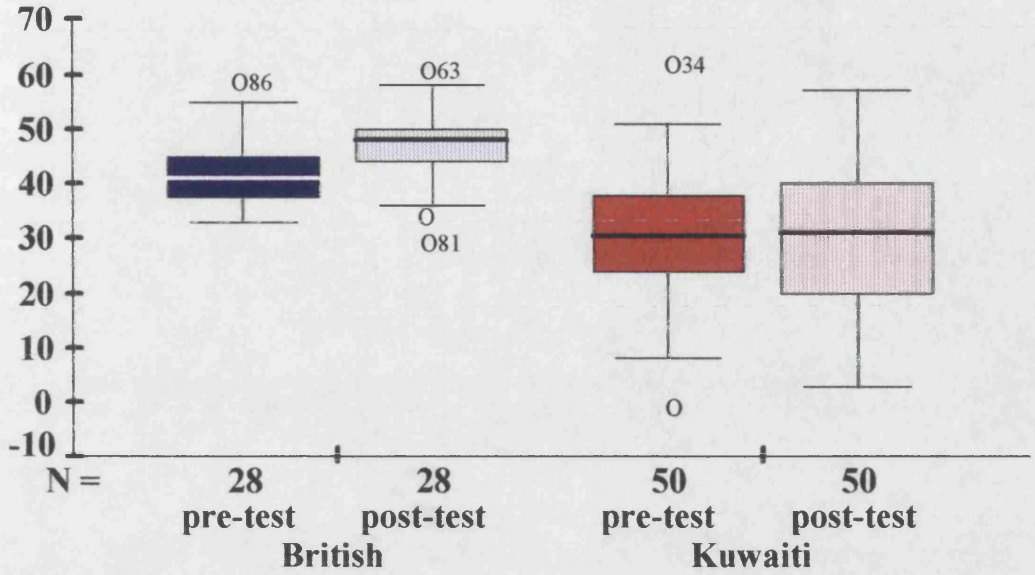


Figure 6.35 The British and Kuwaiti boys one minute timed sit-up test results.

There is a significant difference between the British and Kuwaiti boys in the sit-ups test t = 5.58 pre-test and t = 7.03 post-test. Similarly there is a significant difference t = 4.14 between the pre-test and post-test results of the British boys. There is no significant difference between the Kuwaiti pre-test and post-test results of the sit-up test, at the ($p \leq 0.05$) level, please refer to figure 6.35.

The one minute timed sit-up test revealed a significant difference between the two groups pre-test and post-test. The British boys were able to complete far more sit-ups than their Kuwaiti counterparts. In addition the British groups results were much less varied than the Kuwaiti group. UK pre-test results were spread from maximum 57 to minimum 33, with a mean of 42. Post-test the UK group was also statistically within range of each other with improved scores; maximum 59, minimum 31, and mean 46. The British students seemed to be a physically well matched group.

The Kuwaiti results on this test component were very poor. The scores were greatly varied indicating a wide variety of ability within the group. Pre-test Kuwaiti students closely paralleled the British students at the maximum level with 60 completed sit-ups. Minimum scores were extremely different, the Kuwaiti minimum test score was zero compared to 33 for the UK group. Kuwaiti mean scores pre-test 30, also fell well below the British groups result of 42. Post-test results were similarly discouraging, while the maximum for the Kuwaiti group was 57 compared with 59 for the UK group, the Kuwaiti minimum was 3 and the mean remained 30. These results for the timed sit-ups paralleled the findings of the preliminary study. The British boys were able to complete more sit-ups in one minute than their Kuwaiti counterparts. The Kuwaiti boys seemed to be unaffected by the programme. The UK boys showed improvement but it is again hard to prove with certainty that the improvement is due to the programme. More than half of the British boys indicated in the survey that they participated in activities outside the PE lesson during the period the programme was implemented. The extra-curricular activities that the boys participated in during this time may have required some sort of training which include sit-ups as a component.

6.24.4 The British and Kuwaiti Boys Sum of Skinfold Measurements:

The mean, mode, maximum, minimum, standard deviation, and number of participants for the sum of skinfold fitness test component are presented in table 6.18. Figure 6.36 is a box plot illustrating the pre-test and the post-test sum of triceps plus subscapular skinfold measurement of the British and Kuwaiti boys.

Table 6.18 British and Kuwaiti boys sum of triceps and subscapular skinfold test values in mm.

	Pre-test		Post-test	
	British	Kuwaiti	British	Kuwaiti
Mean	19.52	44.18	20.52	41.10
Mode	14.50	15	18	15
Max.	64	108	56	100
Min	9.50	9	9	8
S	11.66	27.50	10.16	25.66
N	28	49	28	49

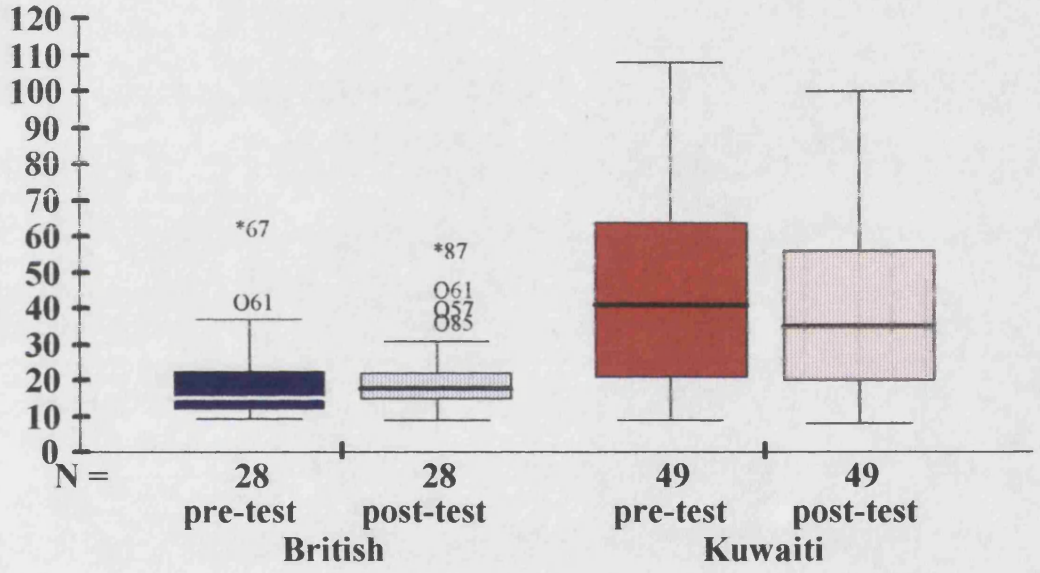


Figure 6.36 Sum of triceps plus subscapular skinfolds measurement of the British and Kuwaiti boys.

There is a significant difference, t = 5.48 pre-test and t = 4.97 in the post-test sum of skinfolds fitness test component between the British and Kuwaiti boys. There is no significant difference between British pre-test and post-test; there is a significant difference t = 3.22 between the pre-test and post-test of the sum of skinfolds measurement for the Kuwaiti boys, at ($p \leq 0.05$) level, please refer to figure 6.36. The researcher acknowledges that the two groups are not homogeneous in variance. It has already been indicated that this affects the interpretation of the t-test, but it is also significant in its' own right. The UK group is much more uniform

in its skinfold measurements indicating similar distribution of fat amongst the UK population. The Kuwaiti population has many pupils who are similar in character to the UK boys but others who are very heavily overweight. This aspect needs to be looked at in future studies.

The sum of skinfold measures of the triceps and subscapular were used to estimate the percentage of body fat for each student. Although 'overweightness' is widely assessed by height and weight tables, determination of body composition through skinfold measures gives a more accurate picture of the persons weight, through the ratio of lean tissue to fat tissue. While body fat is measured most accurately through hydrostatic weighing, validity coefficients between skinfold and hydrostatically determined body fatness have consistently ranged from 0.70 to 0.90 in both adults and children (AAHPERD Test Manual, 1980). In order to in sure most accurate results a Lange Skinfold Caliper was chosen because of its recognized precision.

Results of the skinfold measurements indicated that the UK group is significantly leaner than the Kuwaiti group. The UK group was also very well matched physically, see figure 6.36. The Kuwaiti mean score of 44.18mm pre-test was more than double the British pre-test mean score of 19.52mm. Post-test results are equally startling. The Kuwaiti mean score was 41.10 mm compared to the UK mean score of 20.52 mm. The findings of the preliminary study for this test are similar to the findings of the intervention study skinfold measurements for both groups. The British boys were leaner than their Kuwaiti counterparts.

The results of this test indicate that the Kuwaiti group is much fatter than the UK group. This fatness could have also affected the students scores on the one mile walk/run, sit and reach, and the sit-up test components. It is difficult to say with absolute certainty why the Kuwaiti group is so much heavier than the UK group but the disparity in the two groups physical activity levels could be an indicator. Whether this is cause and effect is a moot point. The UK group was much more

active in and outside of school. The observations of the researcher is that the UK boys were also more active within the physical education lesson itself.

Weight is certainly affected by diet. It would have been of great interest to delve further into the dietary habits of the two groups but that was not possible at this time. It is perhaps sufficient to say that no one gains weight or is overweight if he consumes only enough calories to sustain his daily activities. When an individual consumes more calories than necessary to sustain daily activity it is stored as fat. The Kuwaiti boys apparently burn less calories than their British counterparts.

In conclusion it seems apparent that the Kuwaiti boys are in significantly poorer physical shape than the UK boys. There seems to be little physical activity incorporated into the daily lives of these boys and it falls upon the PE teacher to inform and persuade the students that physical activity is vitally important to adult physical health which could thereby affect all future endeavors.

6.25 Introduction to the Health-related Programme:

The methods used to develop the health-related curriculum itself can be found in chapter six section 6.5. The complete programme can be found in appendix **F**. The curriculum was divided into units of varying length. The units addressed the following topics:

- Health-related fitness and motor fitness
- Exercise prescription
- Cardiovascular fitness
- Flexibility
- Muscular strength and endurance
- Body composition

The programme was designed to be completed in 22 lesson periods. The aim of the programme for the students was:

- To help the students to take an active part in changing their lifestyle to a more active one.
- Increase the level of activity of the students in and outside of school.
- To appreciate the role of physical activity in regards to personal health.
- To distinguish between health-related and skill-related or motor fitness activities.
- To analyze and compare health and fitness benefits from various physical activities.

The aim of the programme for the teacher:

- Increase the amount of lesson time devoted to health-related fitness components.
- To increase moderate and vigorous activity time to 50% or more of the lesson time.
- Teach students the difference between health-related fitness and motor fitness; students should also know how to improve each component of health-related fitness.
- At the end of the programme the students should be able to demonstrate an improvement in health-related fitness test components.

6.26 Programme Setting in England:

In the UK this project was conducted at one secondary school in the city of Bristol, County of Avon. The school is co-educational with a population of 665 divided between years seven through eleven. Students are drawn from a wide area of the city of Bristol and the rural areas directly to the south. The teaching staff includes

the head teacher and four deputy heads/senior management, five senior tutors, and 27 full time and five part time teachers.

Apart from the regular classrooms there was an assembly hall, science labs, home economics, music, and business studies suites. There was also a drama room and an information technology room with computer links. In addition the school had well maintained playing fields, pitches, and tennis/ netball courts.

6.27 Programme Implementation in England:

In the UK I worked beside the regular qualified physical education teacher, he was always in control of his students and there were no troubles or lack of discipline that can sometime be associated with the "substitute" teacher. We administered the pre-test written tests, i.e., the questionnaire, attitude scale and the knowledge test, in the gymnasium during a one hour lesson period on Thursday, February 4, 1993. During the second meeting, which was a two hour lesson period, we completed the four health-related physical fitness tests. The two following weeks there were no physical education classes. The first lesson was missed due to mid-term break, the second lesson was canceled due to an in school party which the year ten boys attended. This was a problem which I was to encounter several times during the implementation of the project in the UK. The physical education lesson was scheduled once a week, when a lesson was canceled there was a two week break in the continuity of the programme, in addition to the one week half term breaks and the two week semester break. Working within a specific time frame was necessary for consistency of the two groups. As it was the British portion of the project would take twice as long to complete because class was only scheduled once a week, the added lesson cancellations could inhibit the students retention of the material presented.

Before we could start the programme the boys were given individual goals. These goals were set through the mutual agreement of the researcher and the students. Arrangements were made to call students, one by one, out of their regularly scheduled lesson to the gym office to discuss their test results. The boys were very enthusiastic

about their results. They were also very concerned about where they fell within the class. They wanted to compare themselves with others, they wanted to know how they ranked with their classmates as well as with the American norms. Some boys in their enthusiasm wanted to set rather unrealistic short term goals. One boy with a ten minute result on the one mile walk/run wanted to try for a five minute score on the next test. This kind of goal setting was discouraged and more realistic short term goals were decided upon.

The actual implementation of the programme was met with rather less enthusiasm. It is not unusual for an individual to want to achieve a physical fitness goal, but are not able to match that enthusiasm with perseverance to accomplish the goal, dropouts for physical fitness programmes are very high (Dishman, 1987). Throughout the programme there was no response to any of the written work on the hand outs given to the students. The work was not difficult or time consuming. If the students had looked at the paper just five minutes during the week interval between physical education lessons they would have been able to complete it without trouble. They were not motivated to do that. This led to a loss of activity time within the lesson time which was not agreeable with the students and researcher. In addition this loss of activity time seemed to adversely affect the students attitude to the programme in general. They often said that there was too much time lost on discussion which was true, but the students, despite the repeated encouragement of their regular instructor and the researcher, never took their part of the responsibility for the successful implementation of the programme. The handout sheets were not meant to completed during the lesson period, there was never to be activity time lost doing writing activities. Students were supposed to prepare activities that they would be interested willing to participate in during the lesson. Handouts were to be read over and prepared before the lesson, not during. The students never brought their contract for physical activity with them to class or kept track of their improvements throughout the programme.

Perhaps the very fact that this was a temporary research programme and not part of the actual curriculum the students did not feel the need to participate to their greatest ability. There also was no contact between the researcher and the students at any time other than the physical education lesson. The regular teacher was always the lesson leader which may also have lessened the rapport between the students and the researcher, thereby affecting the students dedication to the programme. One British teacher did mention that because I was not in a position of authority, or known by the students, the possible positive affects of the programme might have been diminished. Because the lesson period was one to two hours long, depending on the week, the researcher was able to observe the regular lesson teacher and the other teachers who assisted in physical education. There was complete control and supervision by the teachers. Students were involved in the lesson, whether it was soccer, rounders, rugby or field hockey. Teachers were always on hand to explain rules and demonstrate skills. The lesson shifted straight away from the health-related programme and activities into games and motor skills. There was no discussion of health fitness benefits related to these games. The teachers did not attempt to correlate the information presented in the beginning of the class time with the activities in the remainder of the time. For me this was a loss of opportunity, however the teachers were in control of this section of the time and as indicated in interviews they preferred that the students be engaged in some sort of game rather than learning theory. I believe that both can be done simultaneously. In my training we were always told that the teacher was not meant to be a participant in the activity, he is the instructor. In the UK the teachers were enthusiastic participants, while this encourages the students to participate more fully it can detract from the teachers ability to keep up an educational dialogue of the various health components associated with the activity. While well received by the most of the students, the major problem with team games is that not all students are engaged in adequate levels of activity. The number of students per soccer team can range up to 20 a side. There is very little benefit to be found in such a game. This type of activity allows for a lot of chatting

which seemed to fine by the students. My observations and opinions of the value of these games upon the students fitness levels were supported by interviews with the students. Many boys stated that they liked team games because they could stop and take a break whenever they felt like it. In a lesson scheduled for the length of time that the UK lesson was, it is possible for the teacher to have a two part lesson which would suit the needs everyone. Health-related activities and information, to warm up and address their physical needs, followed by a team game which although contains less physical activity for the students, gives them extra pleasure in physical activity. Even if the class meets only once a week, the lesson period can be used efficiently. There is little else the physical education teacher can do to help the students achieve higher levels of health-related fitness, other than campaigning within his/her school and within the community in general; that physical education is essential and more time needs to be dedicated to it.

Another situation that came up several times during the course of the programme was the loss of facilities. The gymnasium was used for GCSE testing and the physical education lesson was moved to the school hall which was much too small for the amount of students. This affected the programme for two weeks in succession, followed by the mid-term break. I do not feel that the students had enough continuity with the programme to affect their attitude toward health-related physical activity. This was shown in post-test results of the questionnaires when there was no change in the amount or type of activity the students engaged in.

The loss of lesson time led to a doubling up of information to complete all programme units. The students became disgruntled and inattentive. They wanted to play soccer and seemed to resent my intrusion into their lesson time. This resentment led to chatting which caused further delays and repetition of information, it was not what I had foreseen when constructing the programme. Information that should have taken no more than five minutes to impart took over 10. The students had not prepared their activity sheet for the lesson so time was also lost on this. Once the students started the activity portion of the lesson they were happier and more

cooperative. They were to be engaged in activities that were aerobic and anaerobic and activities that affected body composition. The boys set up relay stations and competed against one another. They were talking and laughing and enjoying the activity. Fun competition seems to be a very important motivational factor for these boys. When doing background research for the development of the programme many sources stress the need for non-competition, while I agree that aggressive competition is exclusive and diminishes enjoyment for the majority of students, playful, friendly challenge seemed to encourage the students to do more activity for a longer period. The spectrum of competition proceeds towards self-motivation but that concept seems to be beyond these students, at this time. If physical education routinely incorporates health-related activities and health-related information, the link between externally motivated childhood physical activity and internally self-motivated adult physical activity may be formed. The physical educator must plan lessons which encourage physical activity for a lifetime. This type of lesson must begin early in the child's education and carry on throughout his/her years in physical education. A three week unit at the end of the term will not be sufficient.

The various tools used in this health-related curriculum were meant to encourage the students to think about, and understand more about physical activity and health. It is a concept Corbin, Fox, and Whitehead (1987) refer to in Biddle (ed.) (1987) as, *"the stairway to health-related fitness (p. 9)."* Educators will not always have control over students, it simply is not enough to make students physically active in school. Physical education teachers must impart information and opportunity for students to make conscious decisions about their physical activity levels. Only in this manner will the individual be able to maintain physical activity levels and physical fitness as an adult.

6.28 Programme Setting in Kuwait:

The second half of the project which was done in Kuwait had to be conducted during the temperate fall/winter season in order to be comparable to the UK weather conditions. This timing was essential because of the effect the extreme summer heat could have on the physical fitness test battery.

In Kuwait the programme was implemented at one secondary school in Kuwait. The school is set in a mainly middle class Kuwaiti residential area. It is a single sex school with 301 students divided between four grade levels. The students range in age form 15 to 18. The students are required to study religion, Arabic, English, mathematics, science, history, geography, art, and physical education. The school has a gymnasium, outdoor hand-ball court, and outdoor basketball court. These facilities are large enough to accommodate the physical education students but are poorly maintained.

6.29 Programme Implementation in Kuwait:

The Kuwaiti boys had physical education twice weekly, the programme could be implemented in a shorter time span in Kuwait than in England. The programme began on October 10, 1993, with the pre-test administration of the written tests. The boys were cooperative, and slightly amused that someone thought physical education needed written work. The physical education teacher helped distributing and collecting the tests. During the physical tests the boys worked well and cooperated. The least popular test was the one mile walk/run, several boys did not participate in this test, they refused to get hot and sweaty, they hated to run. The third lesson period which was to be the beginning of the actual programme gave an indication of what the future held. The students made it perfectly clear that they had done their duty by cooperating twice. Time for cooperation was over, 'give us the ball and shift'. The physical education teacher was also of the same opinion as the students. Physical education is for kids. He regarded his responsibilities as an instructor as taking

register, throwing out the ball at the beginning of class, collecting it at the end of class, and then dismissing the students when the bell sounded.

Our first unit was information on the differences between health-related fitness and motor fitness. There were a minority of students who were very interested. These boys indicated later in individual interviews that they were often left out of the games played in physical education because they were not the most skillful players. They enjoyed sports and being active but felt that playing during physical education would result in injury because the other more athletic boys were too rough. Upon the completion of this programme unit I assumed that the regular physical education teacher who had not been present previously would present himself and take over his class, he didn't and the students said he rarely did. The students went to play soccer on their own. It was free-time play, three or four of the more skillful players dominated the ball. The field was in poor shape with debris and even broken glass strewn about. I went to the students and told them that they must follow proper game rules and safety guidelines. The students insisted that physical education was their time and a teacher was not needed. From this point onwards I became a source of unwanted authority and disruption in the students class. In further sessions I found myself insisting, yes, you must wear your physical education kit, yes, you must absolutely wear shoes to engage in any type of activity, either indoors or out on the field. These were all practices which were obviously the order of the day for this physical education class. The majority of the students told me very pointedly that they had their proper kit and they were present in the gymnasium and I couldn't force them to participate and physical education didn't affect their grade, that was that, end of story. While there were boys in England that were not fond of the physical education lesson, they were never rude or disrespectful toward their teacher. The disregard these boys had for physical education and physical education teachers was palpable. Their physical education teacher didn't appear to respect the subject he taught and this seriously and adversely affected his students. During an interview with him he said that he didn't believe there was a need to teach the students anything

in physical education. The students had a lot of work in their other classes. They needed a break, and physical education provided an activity break. The boys should be free of school pressures in physical education. It is true that physical education can serve as a respite in a day of lectures but that doesn't mean that there should be no control or education within the class. What about those students too afraid of bodily injury to join in the games, where is their activity break? I continued to work with the students, insisting on kit and shoes, and participation. There were several boys who showed a very keen interest in participating in more health-related fitness exercises. They often asked questions to clarify specific points.

The period preceding the physical education lesson we were studying was a general break period. All students were free for approximately 30 minutes. The physical education teachers, under district physical education guidelines, were to use this time to set-up extracurricular game competitions between the students of different physical education classes. The teams were chosen and a schedule was arranged, these competitions had been taking place during this free period. Quite a number of boys were involved, principally with soccer but with volleyball as well. There were also quite a number of student spectators. While this type of activity does little to help the non-athlete it was good that some of the boys had an extra opportunity to be active during the day. While I was present during this free period the deputy head of the school came into the physical education office. Very discreetly he told the teachers that the competition had to stop because it was necessary for the students to go to the school cafe to buy snacks and drinks. The profit from the cafe was used for various things throughout the school, and these extras were certainly more important than any physical education competition. When I tried to explain to him the boys need for extra activity he asked me why I was bothering. This programme was rather peculiar for physical education. The other schools do not do any testing in physical education, my efforts would not be recognized or appreciated by my superiors. I was surprised by this attitude from him as he was a former track champion, and had actually been my physical education teacher in intermediate school. It would of

course take another study to understand the change in the attitude toward physical activity that seemed to have occurred in this man. Did he feel that there was no value to physical activity even though as a young man he was a first class competitor? Perhaps I am the one who changed, after all the needs of the school supersede the extra-curricular activities of a few students. It was a very interesting occurrence and one which warrants further investigation. The influence of authority figures upon the attitude of those around him is very well documented (Comer & Sparks, 1992). It would be useful to understand who was affecting whom in this situation. I did not witness this obvious lack of support for physical activity in England. All of the teachers were enthusiastic, and the students responded accordingly. The teachers did indicate that they thought some of the other teachers and some people in administration did not appreciate the value of physical education, but this attitude was not seen from the physical education instructors. The physical education teacher was always the leader of the class, his support for the project was unwavering and his authority within the class was unquestioned. He was a professional teacher with an important job to do and anyone who came to his class knew to be prepared. The students may not have always liked it, but they knew that non-cooperation wasn't tolerated.

The lessons continued and the Kuwaiti boys did start to wear their proper kit and shoes but were aghast that I expected them to take part in the class as well. On several occasions students told me that they had an exam later in the day so they were sorry but they couldn't participate in PE because they had to study. Physical education simply was not a school subject to these boys, or to the physical education teacher, or to the deputy headmaster. The physical education teacher was surprised when I didn't excuse the students to study. He said that at the end of the year when students take exams physical education is canceled so the other teachers could cram in the last of their course content. While he said he didn't like to do it physical education wasn't as important as the other subjects. I felt that physical education teachers were not considered 'proper' teachers. The boys were quite at ease telling

me if they were going to participate or not. Students told me, *"PE isn't important because it doesn't effect the GPA"*; *"I'll bring my kit but I refuse to participate, you can't tick me absent"*; *"I'll dress but I will not play"*. The students seemed intent on the idea that participation in physical education was solely at their discretion.

There were however still those boys who were quite interested in the information contained in the programme. They checked their pulse, calculated their target heart rate and were interested in what we were trying to achieve. One student came to report that he had increased his physical activity by running laps. There was a small group of boys who showed unflagging interest throughout all sections of the programme, and were always willing to listen and learn. It was very interesting to me that when I allowed free choice of activity after a lesson those boys who scored high on the health-related fitness tests engaged in high intensity activity, i.e., competitive soccer game. The boys who had lower scores on the health-related fitness tests engaged in low intensity activity such as table tennis or a friendly volleyball game, some refused to do anything at all.

On several occasions I found students not registered in the class coming to the gym and socializing with his friends. It seems that these boys had been dismissed from their registered class for causing a disturbance. Instead of going to the headmaster they hid out in the physical education department. I asked if they were allowed to drop into a friends math class they said, *"No, but physical education isn't a class where you learn stuff"*. These students were sent to the headmaster and the habit of 'dropping in' was stopped while I was conducting the lessons. I have no doubt though that the procedure began after I left the lesson. The idea that physical education is only for the athletic student and to be athletic usually meant that you were an academic failure was pervasive. The ability to affect such attitude is difficult because of the multifaceted nature of attitudes (Martens, 1975; Allport, 1967). During an interview one student stated that his father refused to let him join in sports. When in secondary school, the man was on a championship volleyball team. He neglected his studies and was not accepted into higher education. Athletes are stupid,

and they waste valuable time playing while they should be studying. There was no middle ground in this attitude, but with proper time management a person can certainly have both, education and physical activity. There are many researchers that argue that extra physical activity can enhance mental capabilities as well as the physical capabilities. Throughout British and American high school sports programmes are many very gifted athletes who also keep up their school work and obtain scholarships from prestigious universities. Dr. Charles Kuntzelman, director of the 'Fitness for Youth' programme at the University of Michigan states:

> *"Physical education is important. It not only improves children's physical health, but it enhances their mental health. Recent research shows regular, healthy exercise is one of the best ways to enhance your children's self-esteem, reduce their chances of doing alcohol and drugs, lessen antisocial behavior, diminish anxiety and depression and help them do better in school."(Youth Fitness, 1993).*

Knowledge is easier to affect than attitude (Thompson, et al., 1984). The constant repetition of the health ideas embodied in the programme could have some effect. Even if the students didn't go out of their way to study, if they repeatedly heard the information they might retain a portion of it. There was a significant change in the Kuwaiti boys pre-test and post-test Knowledge test results. Like the programme or not, they showed an improvement. The t-test yielded a value of $t=10.91$. The idea of educating the students of the benefits of physical activity seems to fall naturally into the context of physical education, the two go hand in hand. The Kuwaiti boys didn't see it this way. Handouts and written work were not well received by the boys. There wasn't any difficult work involved, rather handouts reiterated and emphasized the topic discussed in class that day. Definitions and equations for target heart rate were included so that the students didn't have to write it out themselves. All necessary and pertinent information was contained in the handouts. Even this seemed to be too much for some of the students. After one lesson a student reminded another that he had left behind his handout, the boy replied,

"Leave it there I don't want it." Again I couldn't help wondering if the boy were in a 'real' academic lesson would he have been so flip? The boys also resented the fact the that the other physical education classes could do whatever they wanted. As the programme progressed there were more and more study sheets left behind. The students said they had too much work with their other courses. On one occasion a boy asked me, *"Just how long are you going to keep giving us these papers?"* This boy was typical of the majority of the students. They were quite at ease telling me off and questioning everything that was asked of them in class. They wanted to play soccer when they wanted and how they wanted, and a 'teacher' was an intolerable nuisance. Finally, toward the end of November the boys grudgingly accepted that their physical education lesson was different, that is not to say that they became enthusiastic or convinced of the need for appropriate physical activity. I do need to stress that there were some boys who were quite keen. There was an exceptionally talented soccer player interested in aspects of exercise physiology, body composition, and cardiovascular endurance. The other most interested boys were the non-athletes. One boy in particular was overweight and very sensitive to this fact. We did all his measurements in a private room because he didn't want to take his shirt off in front of the other boys. He was looking for help to understand his body and how to work to make himself more fit. From my observations this was the boy that would never be encouraged by the type of physical education lesson that was the norm in this period.

After the information for a unit was discussed we would engage in various associated physical activities. The first occasion the boys organized a quick game of soccer was enlightening. God help the boy who made a mistake. These boys were in it for keeps. Cussing and shouting at teammates and opponents, no rules, and no shoes to play, were all perfectly acceptable standards of play. When I stopped 'play' to set ground rules, i.e., no profanity or violence, and standard game rules, I was mobbed. They felt they couldn't play properly in shoes and rules were not necessary, they only wanted to play. There was no progression of learning within the physical education system. Some students said that they were taught various activities in

different physical education courses at different schools. The majority, however, stated that they were usually given a ball and told to go play. The boys accepted that there was no hope to play their way and so they wore shoes, infractions of rules and profanity resulted in indirect foul. They didn't like it but they accepted it. One day another class wanted to use the field to play soccer. We decided that a friendly game would be good. However, when I insisted the other team had to wear their proper kit and shoes they were cross. They went to complain to their regular teacher (inside the building), who in turn came to complain to me. *"Let them alone to do whatever they like"*, was his recommendation. If this is the attitude of a qualified physical education teacher what could I expect from the students.

The influence of the teachers attitude can have an enormous impact on the learning of the students. It is very important for the physical education teacher be a good role model to the students (Ostro, 1984; Shields, 1984). A disinterested, overweight, inactive person does not encourage activity in others. The significant influence, either positive or negative, of the teacher must never be forgotten.

The boys were very competitive. While the competitive spirit is an advantage in certain situations, we were emphasizing the inherent value of physical activity to the individual. Beating the other guy should not be considered your number one priority. To achieve this we used verbal discussion, written forms, and practical physical activity. From mid-December onward there was considerably less complaint, but I wouldn't say that they enjoyed the work overmuch. I had hoped that they would enjoy learning about the science behind physical activities but this did not prove to be true for the majority of the students. The physical education class that we were engaged in was a severe shock for them. It is interesting though that only one boy said he didn't like physical education lessons. All the others stated that they quite liked physical education. Why? It is a lovely break. It seems ludicrous that a school system should support such an ill run department. Aren't there any supervisors? Does no one check what is going on? Yes, the Education Authority employs specialist inspectors for each course of study. The physical education

inspector must be a certified experienced physical education instructor. The inspector must give notice of the date and time he intends to arrive. Was it a surprise then when the inspector arrived and all was in readiness? The physical education teacher was present, and students were dressed and participating in a variety of activities. The teacher extolled the virtues of his class and the lessons he taught. The inspector was most interested in knowing if the boys played enough soccer and if there were any talented players. There were no assessment records to check because this was physical education after all. There was no need for written work. There was no way to check progress or prove they are fulfilling course requirements. The inspector walked through the lesson and then he left. This change in the teaching of the lesson does not go unnoticed by the students. One Kuwaiti boy stated during an interview that his experiences with physical education had been very similar throughout all his school years,

> *"In elementary and intermediate we would learn some skills, then the teacher would give us the ball and we could go play. Here in secondary it's better because we can take the ball and play straight away by ourselves. Except when the inspector comes to see the teacher, then we have to do some exercises and different things."*

The programme concluded in January with the re-administration of the questionnaires, attitude scale, knowledge test, and AAHPERD health-related fitness tests and individual interviews. There were those who let me know they would be glad to see the back of me. They were looking forward to having their freedom back; one boy said he would be sorry to see the programme finish because he cannot cope with the 'standard' physical education lesson, he simply was not a good soccer player.

From my observations during the implementation of this programme there is a major need for the Kuwaiti students to learn the value of physical education and that it has an integral place in the education curriculum. Kuwaiti students will also need to be taught what can be achieved through physical activity, the potential benefits of physical activity for the individual. There is need to inform the students about the

connection between physical education and physical activity and health. In a games or motor fitness oriented physical education programme, students are quite often reminded of what they can not do. They might not be a superb striker or defender; they might not be able to block or spike a volleyball, failure can only breed resentment and non-participation. This needs to be addressed. Students can learn to improve their levels of physical activity for their own benefit. The situation will be hard to address in Kuwait because there is little public awareness of the value of physical education and physical activity. Physical education is for fun, and physical activity is for those who are athletic. There will be stiff opposition to any change in the physical education curriculum in Kuwait. Why change? Students, parents, teachers, and administrators all seem to be satisfied with the current physical education lesson. Students who do not like physical education do not have to participate, everyone is content. This situation simply can not be accepted by physical education professionals. The students are young and lack the basic knowledge about this subject to make a properly informed choice. Children are in school to be taught, and exposed to new concepts. Teachers as the responsible adult member of the student/teacher partnership, must teach students what they need to know, not just what they want to know. It seems obvious that the students interests may not equate with their needs. However, if you have a toddler who prefers Pepsi to milk is it acceptable for the parent to acquiesce and give the child only Pepsi? This is of course preposterous and the same holds in education. The children's interests do not always match with what his teachers realise he needs to know. It is up to educators and curriculum planners to find the balance between need and interest. We have no right not to teach because the students do not feel the need to be taught. This is especially true in physical education, where we ought to be preparing the children to incorporate daily physical activity to protect their health now and in the future. It won't matter if the students become the most brilliant person in their profession, if when they reach 45 they fall over dead from a heart attack, or are physically impaired by some other

ailment. Constantinos Doxiadis (1967) makes the point of preparing for the future needs of the students quite elegantly:

> *"Dealing mainly with the present is unrealistic because by the time we have analyzed the situation, defined our problems, and planned how to meet them, the present has become the past; by the time we are ready to act and create new conditions, the present is the distant past. It is time that we learned to think about the present as a dynamically changing situation. If we wish to ameliorate the conditions of our life, we have to think far ahead in order to understand where we are going and to define whether we like our destination or not. If we do not like it, we must decide how we can take a different road at some time in the future, which when we act, will be the present. It is for these reasons that we must start thinking about life in the year 2000, life in the year 2050, life in the year 2100"* (p.12).

6.30 Individual Structured Interviews Introduction:

The teachers opinions of the programme and attitudes toward teaching physical education were discussed in individual interviews. The influence of the teacher can have a great effect on the attitudes and opinions of the students. These interviews are not meant to be representative of the attitudes or opinions of all physical education teachers, simply they add insight to the opinions of the teachers involved with this project.

The interviews with the students were to help the researcher understand in greater depth the opinions of the students, and the influence of the programme upon them. Two British students and two Kuwaiti students, one student from each group with improved test scores and one student from each group with no improvement in test scores are presented here.

6.30.1 Teacher Interviews- Interpretation:

It was very interesting to interview the teachers. The responses were in actuality very similar in both countries. The difference in dedication to the students and to the actual teaching of physical education was more apparent upon observing the teachers during the implementation of the programme, rather than during the interviews. The UK teachers were always present during the physical education lesson, which was not the case with the Kuwaiti teachers. The Kuwaiti teachers were not involved in the lesson and this was re-iterated during the interviews. The physical education lesson was for the students and they really did not need, or want a teacher. The UK teachers likewise felt that the lesson was for the students to enjoy themselves and run around, but they also felt it was important to teach the students the right way to do things. The teaching was limited to games skills, but at least this was done with regard for the students physical education needs as perceived by the teachers.

The teachers in the UK had very similar opinions about physical education and about the students. The UK teachers assessment of the students fitness levels were quite accurate when compared with test results. The Kuwaiti teachers had varying view points on this issue. While they shared the opinion that physical education is only for fun, it was very interesting to note the difference in their assessment of the students activity levels. One teacher said fitness levels were very high and the students could play for hours and not get tired. The other teacher said the levels of fitness were very bad, that the students couldn't run two laps around the track. These teachers also stated that fitness testing is a bother because it involves writing and monitoring. They had very little understanding of their pupils current fitness status, this may be due to the fact that they seemed to be casual observers in their own lesson period. I do not wish to be harsh or judgmental of these Kuwaiti teachers, they are teaching students the way they were taught themselves. They are teaching physical education in the manner that it has always been taught in Kuwait, in the manner that is expected by students and administrators, that is the problem and it will be very hard to address and correct.

Another very interesting point the teachers mentioned was that when they were younger they were sporty, but now as adults they were not active. None of the teachers attributed this adult sedentary behaviour to the fact that they were not taught the need to be, or how to be, independently physically active in physical education lessons. It seems that they were taught to be skillful players and when the opportunity to be active in team games was no longer available, the teachers, very sporty though they were, stopped being active and adopted a much more sedentary lifestyle. Sadly for all concerned, these teachers are now passing the same legacy along to this generation of children, game skills rather than lifetime activity skills. I myself came to the physical education profession because I was sporty and enjoyed games, I thought physical education would be the perfect vocation. As a physical education teacher I would be able to teach the students to be good games players. I'm not sure if at that time I was conscious of the fact that I would in all probability be neglecting, as did my physical education teachers, the needs of those students who were not 'good' players. I never thought about activity for health, it was almost the reverse, I was healthy so I was able to be more active than the others students. The beneficial affect of activity was never considered. When it came time for me to give up on team games I was frustrated and gained weight. I had little experience with exercise for health, conditioning for games yes, but for me there was no activity without games. It was very difficult to teach myself to be independently active. I was very fortunate to be able to learn at that late date the true value of physical activity. I can only wish that there would have been a different type of physical education lesson available for all the students at school so we all could have learned of the very real benefits of physical activity. I'm sure some of my classmates never did learn.

None of the teachers were overly concerned about the amount of time allotted physical education in the national curriculum. There was a wishfulness that there could be more time. However, they all seemed to accept the notion that the other subjects the students were enrolled in took precedence over physical education.

Being physically educated did not matter to the students future employers. This is a very distressing attitude. The research into the topic of appropriate amounts of physical education for children all stress that daily physical activity is what is needed. This is the standpoint of the PEAUK and AAHPERD as well. Daily physical education lessons are certainly something that can be realised if the authorities are pressed hard enough by physical education professionals. The Canadian Association for Health, Physical Education, Recreation and Dance (CAHPERD) in its Spring 1995 Journal announced the success of physical education lobbies from three Canadian provinces in obtaining, from their respective education authorities, recommendations for daily physical education for all students . The Canadian successes are an example of what articulate and tenacious professionals can achieve, daily physical education is not simply wishful thinking. Perhaps the lack of mandatory daily physical education in the UK and Kuwait is due to lack of understanding of the true value and need by parents, government officials, and sadly physical education teachers.

The position that physical education warranted within the school was another issue that received parallel responses from teachers in both countries. The respondents believed that other teachers and administrators did not value physical education on a par with other subjects within the curriculum. This is an issue that the teachers can address through example. The professional teacher can indicate through actions and words the value of physical education. Stressing the value of physical activity to the students and other teachers could be a positive step. The physical education teacher could take it upon himself to organise keep-fit programmes for the staff, physically educating them, maybe for the first time of the value of physical activity. These are viable options for the physical education teacher, but it will take time to see results. Some physical educators are not physically fit themselves, and set little example to follow. In addition other teachers and administrators have a lifetime of experiences and opinions behind them, we are asking them to not only change their way of thinking but also their behaviour, and that is not a simple issue.

Another aspect that the teachers in both countries shared were their opinions of the programme itself. It was too long, too intense, not enough competition, not enough games. These comments placed everything in a whole new light, how can we teach children the value of individual activity and the transitory benefits of games, if their teachers are not convinced that the teaching of the health values is a prime concern in physical education class? The units contained in the programme were something to be incorporated into every aspect of the lesson, every lesson. The teachers all seemed to feel that a couple of lessons dedicated to health-related exercise was all that was needed to educate the students about the benefits of activity. One UK teacher stated that, *"Children will in time realise the benefits of physical activity and exercise but it's a very long process"*. How does a child learn if he is not taught? If it's a long process shouldn't it be taught sooner rather than later? Continuously? Healthy physical activity habits are much easier to instill in younger rather than older individuals, it simply is not enough to say that if a student enjoys physical education and games he will then participate in the activities as an adult, there is a copious amount of research to the contrary. The definition of physical education could be a problem in this instance, what is physical education? The teachers interpretation of what constitutes physical education will surely permeate his/her teaching style. It appears that the teachers involved in this study were taking physical education to mean teaching children to attain various games/movement skills. Although I'm sure that the teachers were interested in the health benefits of physical activity, it seemed that they believed that the students would somehow get healthy as an offshoot of games playing. This however is usually not the case. Many studies have shown that students are sometimes less active in physical education lessons than during their free periods in school, and that games do not generally improve students fitness. There must be instruction in physical education and it must be constructive and benefit the student for his/her lifetime. Educators cannot simply use the students so they can get out of the classroom and participate in a game of football, what happens when the students leave school? How will they get their activity? If they have not been educated to

participate in individual physical activity, they will find themselves in the same position as their physical education teacher found himself, they love to play team games but there is no longer a team. Pengrazi and Corbin (1994) indicate that it is incumbent upon physical educators to help students realise the need for 'Total Fitness' not simply games fitness,

> *"Total Fitness allows a person to:*
> - ***Meet emergencies**- Run for help when a friend has been hurt, climbing over fences or jumping a creek if necessary.*
> - ***Be healthy**- Reduce the risk of diseases such as heart disease, back problems, obesity, diabetes, and so on.*
> - ***Work efficiently**- Work with less fatigue and with more efficiency.*
> - ***Enjoy leisure**- Have energy to do physical activities, such as playing sports, during free time.*
> - ***Look good**- Look your best by building muscles and maintaining a desirable level of body fat (not too much and not too little)." (p. 8).*

These benefits must be planned for, they won't just happen. It is important for the physical education profession as a group to uphold and foster these ideals, to do our best for the students. The teachers in the UK were concerned that the students participate in the lesson but it didn't seem apparent that they were preparing the students for lifetime activities. Kuwaiti teachers saw physical education as a release from school pressures, there seemed to be no value in physical education beyond that.

From the interviews it is obvious that before health-related fitness is the centre of the physical education curriculum in either country many obstacles will need to be removed. Teachers will need to be convinced of the need to change their teaching style away from, but not excluding team sports, and toward lifetime activities and student self-assessment.

6.30.2 Student Interviews - Interpretation:

The students definitely had their own opinions of what constitutes physical education. They had definite likes and dislikes and these were strongly reflected in their participation during the research and their test scores.

The boys who were not fond of physical education were quite adamant, they were simply not going to do something that they preferred not to do. They would not participate fully in the lesson for any reason. This was especially evident in Kuwait, and although a part of the physical education lesson in the UK, it was not as blatant. Kuwaiti boys thought that physical education and physical activity were a waste of their time, as well as their mind. The Kuwaiti boys liked physical education for a break. They felt it was difficult to study all day and physical education was a chance to meet with their friends and watch a game of soccer, or perhaps to participate in an activity at a low intensity. When I asked one British boy what it would take to get him to be active he was very serious when he said, if a big dog chased him he'd move, otherwise he wouldn't. I wondered to myself, how far would he get? That big dog would probably outlast him in his current physical condition and then there would be a nasty shock in store. That is the point of physical education. To prepare students for lifetime activity. As previously mentioned Pangrazi and Corbin (1994) cite the need to be able to meet emergencies as a tenant of total fitness which should be the goal of physical education. The Kuwaiti student quoted here, and many others who did not fully participate in the programme or physical education lesson, placed themselves somewhat higher intellectually than the physically fit and active students. They were too smart to get caught up in activity when school is for learning. Some of these boys were considerably heavier than the more active boys, and, they seemed to lack confidence in their abilities to perform activities. The lack of supervision in the Kuwaiti physical education lesson was also a deterrent to participation by some students. Some boys were merciless in their teasing of overweight students. These boys learned that physical activity within physical education was best avoided. The physical education teacher allowed boys to use the physical education lesson as a study

hall if they preferred, while he may have been trying to be considerate, it was little help in encouraging the boys who needed to be active the most.

The boys who enjoyed physical education and showed improved test scores seemed to participate from sheer enjoyment. They had self-confidence and were highly motivated. This motivation appeared to be internal, there was little need for outside encouragement. The British boy and the Kuwaiti boy whose transcripts appear in appendix G stated that they participated in a variety of activities outside of school. The Kuwaiti boy who was active was very interested in becoming a "star", the British boy expressed a real desire to active for fun and health. If the Kuwaiti boy didn't become a star he may quit being involved in sport as he did not get what he wanted from participation. It seems that the British boy may be more likely to continue to be active into adulthood. This is especially true when considering the activity patterns of the boys parents. Both the boys' parents were very active, his mother even had her own business in the field of aerobics. The boys' father routinely exercised at home using video exercise programmes and step aerobics routines. Physical activity is a way of life for the parents, their actions are an endorsement of activity for health, and it is probable that considering the boys love for activity, he will consider physical activity an important part of his adult life.

Chapter Seven
Conclusions & Recommendations

7.0 Introduction:

This chapter will present conclusions and recommendations from the findings obtained from the British and Kuwaiti 15-16 year old boys during the various sections of this study. These sections include the pre-test and post-test administration of the questionnaire, knowledge test, attitude scale, and AAHPERD health-related physical fitness tests; the health-related physical education curriculum; and personal interviews with the students and teachers. Recommendations based on these findings will also be presented.

7.1 Conclusions and Recommendations Overview:

Before I begin to summate the results of this study I must first make the reader aware of the way in which I see, and will be interpreting, the results of the work. While this paper signifies the conclusion of this study, it signals for me a new beginning. As a parent I often wonder who learns more, the parent or the child. This thought has been poking at me throughout the whole of this dissertation as well. I am sure that what I learned from the implementation of this project heavily outweighs what I have been able to give to the students involved, I do feel a great regret for that. I can only hope that I will be able to make positive use of this information, thereby being more beneficial to more students in the future.

I must first admit that previous to this work I was a very 'numbers oriented' person. I could easily classify someone by percentile ranking or mean/median/mode and be glad when the information was in its proper compartment. Churn all the numbers together and that was the end of the story. So many students were at "X", so many at "Y", and so many at "Z". But there was never "WHY?" they were there, they simply were. I would like to think that with an exercise physiology background I could find a place to lay a bit of blame, numbers are very important in this field. But

that really isn't fair. Physical education is comprised of both quantitative and qualitative theory and that should never be forgotten by physical educators. Exercise physiology quantifies the physical, giving the physical education teacher a point of reference. However, diverse educational needs can only be understood through humanistic approaches which recognise the individual and appreciates personal needs. When I began to implement this study I was made fully aware of the individuals behind the numbers. Teen-age individuals who were willing to let me know they were not impressed by an activity. I have also been made sorely aware that what might work in one situation might not work as well in an another situation. I was culturally naive. I had often read articles about cross-cultural education and how teachers must learn how to teach children of different ethnic origins from different angles. I saw this as over the top "political correctness". I must also admit that I was slightly suspect of the researchers motives. Informing teachers that children of different races, but from within the same community needed to be taught differently, seemed to say that one group of children were fundamentally different; better or worse than the other.

I learned well that my belief was wrong and cultural differences are very important, they do not affect the student's ability to learn, but rather in the value students will ascribe to certain information. These differences in perception cannot be ignored or underestimated, that would lead to a lack of communication within the lesson and probable feelings of failure for both the teacher and student. Therefore I draw my conclusions about this study being fully convinced that:

- Culture makes a large impact on the educational process.
- There can be no numbers without people.
- In physical education research attaining statistics cannot be seen as the end of the quest for information.

7.2 Conclusions:

This section presents the conclusions of the lifestyle questionnaire. Although this is not a normative study and is not comparable in scope to recent national studies undertaken in the UK, some observations can be made. It was extremely difficult to draw singular conclusions about the various topics of investigation included in this study. The attitude, knowledge, opinions, and physical abilities of the individual students are all inter-related and influence the entire study in combination.

7.3 Physical Activity and Physical Education:

The survey of the student's personal habits, physical activity patterns, and opinions about physical education yielded a great deal of information and insights into those areas. The students in both countries have a generally positive attitude toward physical activity and physical education. This is a foundation for health and physical education specialists to work upon. The public health authorities and the educational systems must work together to nurture and support this attitude within the younger sections of the population. Encouraging students to be physically active outside of school hours may increase their participation in physical activity as adults.

The principle that an active society is a healthy society is supported by many respected health promotion organizations throughout the world. "Exercise is Medicine", is the slogan for the journal, THE PHYSICIAN AND SPORTSMEDICINE. Although physical activity and exercise are not a magic elixir and people who are physically active can become ill, physical activity does have vital health related benefits and does create a stronger body with greater ability to fight and recover from illness. Conversely, there are known health risks accompanying inactivity.

It is highly recommended that adequate amounts of appropriate physical activity be incorporated into a person's life as early as possible (AAHPERD Test Manual, 1980; Epstein, Valoski, Wing & McCurley, 1990; Goldblum, 1979). Responses of the two groups both pre-test and post-test, indicated that the British

boys were substantially more active outside of the physical education lesson than were the Kuwaiti boys. This reflects that physical activity is accepted as a valuable way to spend free time in the UK. In Kuwait physical activity for the older child and adult was viewed as a waste of time. This attitude was reflected in the lower participation rates in Kuwait. Optimum levels of physical activity are likely to be achieved by children if they were taught positive physical activity patterns in the home, by their parents. Results of this study indicated that while this may be possible to some degree for the British boys it is highly unlikely for the Kuwaiti boys. The Kuwaiti boys stated that their parents did little if any extra physical activity. They thought that their parents were average compared to other parents, that the activity levels were acceptable, especially for people their parents age. There is a need to educate the parents as well as the students that average is not always good, and in this case it is extremely poor. This educational process could be taken up by the Public Health Authorities which could produce culturally valid advertisements and commercials similar to those produced by the British Heart Association, the British Cancer Society, and the Sports Authority.

7.4 Physical Education Lessons:

Positive physical activity patterns can also be promoted and encouraged by the one organization that is allotted the second largest amount of the children's time, the public school system. Headmasters, teachers and especially physical education teachers will need to be aware of the need and value of health-related activity within the physical education curriculum. Students will learn by example, by being physically active themselves those in authority indicate that there is value in being physical activity. This was evident in the UK, where the physical education teacher took an active teaching role in the lesson. He often was playing with the students and was demonstrating the various skills for a lesson. The students in the UK were much more involved in the physical education lesson. This sort of participation by the teacher was not apparent in Kuwait. The physical education teacher stated that he, at

45, was too old to participate in any physical activity. The students were also very nonchalant about their participation in the lesson. It is a difficult problem to address, the Kuwaiti teacher and the students reflected the attitude of society in general. It will take diligent effort and time to effect a positive change this situation.

The amount of time both groups were scheduled physical education lessons was inadequate to realize any substantial improvement in the students' physical fitness. While it is true that physical education is designed to educate the students about the value of physical activity and is not solely responsible for the students physical activity requirements, there must be adequate amounts of school time invested in the course or results will be unsatisfactory. Although this is not an unreasonable request it may not be embraced with enthusiasm by all concerned. Changes would have to occur. Changes that would probably throw schedules out of balance, physical education curricula would have to be scrutinised, physical education departments would probably have to be reorganized, budgets may also need to be rearranged. While this type of restructuring would be a major undertaking, in the long run this step in early prevention may avoid or minimize expenditure on lifestyle related illness in the future.

While somewhat controversial at this time, there is a need for some type of standardized testing system that would allow monitoring of fitness levels within the physical education setting. There are some researchers who are against fitness testing. They feel that too much time is lost for no genuine reason. That physical fitness testing only measures the maturation of the students. Certainly, testing must be appropriate for the lesson and the students. It must also be of the shortest possible duration, but it must be done. Testing is not only for the students but for the teacher as well. Is there progress being made? Do the students understand the material being presented? Is there a gap between what is taught and what is being learned? If the curriculum was changed, but never tested or evaluated, how would you know you were doing the best for the students. If we all went on a diet tomorrow and did

our best for six weeks wouldn't we want to get on a scale and see the results of our efforts? I believe that this is the same for testing in physical education. If we expect the students to work at something they will naturally want to see some sort of a result. It is a very dedicated individual indeed who does not want to see his improvement, rather than simply feel that he has improved. There are many students who can try for a year and never become a star athlete, this will be the student that does not participate in physical activity as an adult. If, however we help him to understand his own individual progress by showing him that he is capable of achieving some level of physical improvement, it may encourage him to take up other types of activity during his free time. At the very least we will have educated him to the value of physical activity.

Another change that seems to be needed is the implementation of some type of grading system for physical education. It seems if something is not graded or evaluated, it is an indication that the thing, in actuality, is without value. Without periodic progress reports both teachers and students can become indifferent toward their work. This was quite apparent when undertaking this study. The curriculum itself was not difficult, but in Kuwait and to a lesser degree in Britain, large amounts of time were lost due to lack of discipline and control in the classroom. The attitude that physical education does not count and it is not an important part of the curriculum were prevalent. Although physical education is a required part of the students' curriculum there are no grades awarded, and in a sense this indicates that physical education lacks importance. In Kuwait physical education is something of a break period as it stands now. The teachers might have set certain study plans but did not adhere to them. Students were not tested on either their knowledge of rules, or on their ability to complete certain tasks. Perhaps it could be argued that it is unfair to allow a child's scholastic average to be adversely affected by poor grades in physical education. This is a viable argument, not all people are as physically adept at the various physical activities presented in physical education class as are others. In an

effort to satisfy the greatest number of people, physical education might be a credit/no credit course. In this manner certain physical abilities would not be rewarded (with good grades), or disabilities punished (with bad grades), and yet the importance of physical education could be emphasized. Attendance with cooperation, and achievement of adequate health fitness levels could be used as the determining factors for credit. There should also be a personal achievement record kept within the class for every student. At mid-semester the results could be discussed between the student and teacher. A progress report to the parents would also help to keep them abreast of the students progress and make parents more of aware of the place physical education has in the educational process.

The needs of all students requires careful consideration. Goals have to be outlined along with the probable ways to achieve them. All this will mean organizational meetings where varying opinions are sure to be expressed. Those involved will be asked to sacrifice personal time in order to achieve positive results. Although these things may be time consuming they should pay off in the long run. Healthy children generally have a better chance to become healthy adults producing a stronger and more vital society.

7.5 Seasonal Activity levels:

British boys were more active throughout the year than their Kuwaiti counterparts. When comparing the highest levels of seasonal activity the British boys were more active in the summer while the Kuwaitis were more active in the spring and winter seasons. These seasons correspond with the optimal weather conditions for both countries. These levels of participation are still not of a satisfactory level proportionately. There are many types of physical activities that the boys could engage in but they seemed to participate in other, non-active, pastimes. The results indicated that although the boys overall attitude toward physical activity was positive, physical activity was not their first choice of activity when considering what to do in their spare time.

7.6 The Most Popular Physical Activities:

Team sports ranked highest in popularity in both countries. Soccer was the number one choice of both groups pre-test and post-test as well as in the preliminary study. However in the preliminary study the Kuwaiti boys indicated swimming and jogging as their second and third choice of activity. There was no change in the type of activity chosen post-test by either the British or Kuwaiti boys. Team sports ranked highest with individual sports ranking lower. The British boys' answers for the preliminary study and for the pre-test and post-test intervention study responses are very similar. The programme had no impact on the choices the boys made about the type of physical activity to engage in.

7.7 Sedentary Hours:

The sedentary hours for boys in both groups were very similar. There was no change post-test. When considering these results with previous results regarding choices in physical activity and the amount of free time dedicated to physical activity it seems that the information contained in the programme made little impact on the students. The students improved their knowledge but did not take their knowledge the further step and put it into action. Physical activity patterns and choices seemed to unaffected by the programme.

7.8 Personal Health and Safety Habits:

The area of behavioural health is concerned with various components of individual lifestyles. It is theorized that the more good habits a person has the easier it is for him/her to adopt further good habits. Conversely the more poor health habits, the harder for him/her to incorporate good habits. Personal health habits could positively or negatively effect the students acceptance of the fundamental ideas of the programme. It was for this reason that various aspects of the students personal health behaviours were questioned. While important as baseline information about

the group, not all items addressed within the questionnaire were specifically mentioned in the programme.

The boys in both groups were within healthful parameters for sleeping hours, British boys slept about eight hours each night and the Kuwaiti boys slept about seven and a half hours each night. The proper amount of sleep helps the body to recoup from the activities of the day as well as relieves stress. Improper sleep patterns have been documented to cause erratic behaviour and poor concentration abilities. These students seem to have healthful sleep patterns.

The majority of the boys in both groups ate breakfast daily which aids in proper diet control. There was a certain amount of dieting in both groups, more Kuwaiti boys than British were interested in losing weight. A very small percentage of boys in both groups used only diet control as a means of weight control, this is the least productive means of long term weight management. It often is very restrictive and usually leads to bingeing and an increase in weight. In both groups the majority of boys used diet and exercise in combination to lose weight. This is the healthier alternative. There was very little difference post-test in the number of students who dieted and in the number of those who restricted calories only as a means of weight control. It seems that the information about weight control presented in the programme was not put to use by both groups of students.

7.9 Tobacco and Alcohol Use:

Tobacco and alcohol are widely accepted drugs which are detrimental to individual health. Both of these substances have been linked to cancer and heart disease and yet they continue to be accepted within society.

Very few boys from both groups indicated that they smoked. The mass media campaigns against smoking have had a great impact on lessening the amount of young people who begin to smoke. However, there is still a percentage who start to smoke

despite the medical warnings. Smoking in Britain is becoming more and more socially unacceptable and the numbers of people quitting smoking reflect this. Although the government benefits substantially from taxes on cigarettes it has been implementing bans on smoking in certain places. It will certainly take time to create a smoke free Britain but if impending litigation against cigarette companies comes to fruition for the petitioners, there may be less cigarettes produced in the future.

In Kuwait smoking is quite acceptable and to ask someone not to smoke in your home or office if you are a non-smoker is socially unacceptable. The guest is not to be made to feel unwelcome or uncomfortable. This is true even of very close friends or relatives. Non-smokers rights in Kuwait seem to be opposite of the laws in the UK, if the non-smoker doesn't like cigarette smoke he should remove himself from the situation. The work setting is a place where a compromise is more likely to worked out and yet in my own work place the no smoking sign in my office is repeatedly ignored by my colleagues. To make an issue of someone smoking is to be a crank. We will all die sometime, not smoking won't keep you alive forever. The Kuwaiti society accepts death as inevitable. Admonitions stating if you don't smoke you will live longer or have a more healthy future are dismissed by many smokers. You could be hit by a bus tomorrow so why not enjoy what you want today. It is a way of thinking that is very difficult to address as it runs to the core of a Muslim society. "God Willing", is one of the most common phrases uttered in Kuwait. We all know of someone who never smoked a day in his life and got cancer and in contrast you have a 90 year old who has been smoking for 80 years and is fit as a fiddle. Come what may, it is all the will of God. It is very difficult to convince the Kuwaiti public that they have locus of control over their health. In some ways it is almost sacrilegious, it is a subject which must be approached with great discretion.

While alcohol consumption is not considered socially or morally acceptable in Kuwait, it is considered very social in the UK. For these reasons it was expected that a greater number of British boys would have had experience with alcohol than the

Kuwaiti boys. Intervention study pre-test and post-test reported levels of alcohol consumption did indicate that considerably higher numbers of British boys, (n=19) pre-test and (n=23) post-test, than Kuwaiti boys, (n=2) pre-test and post-test, were casual drinkers. Preliminary study results yielded very similar results; 61% (n=68) British boys and 3% (n=4) of the Kuwaiti boys indicated they drank alcoholic beverages.

More than half of the boys in both groups owned a bicycle. Riding a bike is a very good form of individual physical activity. It is very beneficial to the cardiovascular system and it is also physically demanding and so strengthens the musculature. It is an excellent way to burn off excess calories, helping to control/maintain proper weight. There was very little regard for safety when the boys rode their bikes. Only eight British boys and five Kuwaiti boys reported wearing helmets when cycling. In interviews at the end of the programme the boys indicated that they did not use safety precautions because they knew how to fall or were to careful not to have an accident. This is a difficult attitude too breach as most younger people tend to think that they are invincible for the very fact that they are young.

7.10 Transportation to School:

The student responses in this section were somewhat expected but still very disheartening. Results demonstrated that a considerable majority of both British and Kuwaiti boys came to school by private car or bus. This is in spite of the fact that more than half the boys in both groups lived less than two miles from school. To walk back and forth to school each day would satisfy the students physical activity requirements, they do not however choose to do so. Post-test responses indicated no change in this daily activity, again the information contained in the programme was not assimilated into the lives of the students.

When riding in automobiles more than three quarters of the British boys in both pre-test and post-test responses indicated that they wore car safety belts regularly.

There is legislation in Britain which fines the driver for carrying passengers without using safety belts. In Kuwait pre-test responses for seat belt use were markedly low, (n=12) boys used seat belts. Post-test (n=22) Kuwaiti boys used seat belts, this was a result of legislation which came into effect at the conclusion of this study. It can be concluded that legislation and the threat of financial penalties can actually affect quick positive responses in ways that education alone cannot.

7.11 Opinions of Physical Education Lessons:

It was clear from the results obtained from the 12 opinion statements that the students in both groups overwhelmingly liked physical education lessons. Opinions were all very positive toward physical education. While I can conclude that the boys like physical education, why they like it may be harder to define. There were varied responses to the health-related programme implemented at the two schools. Very few of the boys wanted to learn within physical education. British and Kuwaiti boys looked forward to the greater freedom allowed in physical education and wanted to simply kick the ball around or talk a bit with their friends while waiting for the ball to come their way. While it is in the best interests of the students to teach and advise them of the value of physical activities within physical education it will have to presented in a way that does not turn the fun of the gymnasium into what the students perceive as tedious educational lectures that curtail activity time.

7.12 Knowledge Test:

The results of the knowledge test indicated clearly that the students in both groups were capable of learning from the materials presented in class. There was a marked improvement in post-test scores, especially in the Kuwaiti group. Pre-test 26 Kuwaiti boys were unable to answer one question correctly, post-test the number was reduced to three. The changes that occurred in the UK group were less dramatic, but were still notable. The students are perfectly capable of learning within physical education. It will be up to the teacher to find ways in which to introduce information

and support it with physical activity. It must be remembered however that knowledge alone will not be able to effect change. There is a big gap between knowledge and commitment to act. It has taken decades to convince people to take responsibility for their health by improving personal behaviours. We all know that we should be more active, eat less, and not smoke, but we are always going to start our better habits on Monday.

7.13 Attitude Scale:

The results of this section of the study indicated that the students in both groups had an overall positive attitude toward physical activity. That result did not change in the post-test application of this attitude scale. While we can conclude that the students have positives attitudes toward the subject of physical activity and physical education, other sections of the study indicate that the students do not combine that attitude with action. When the students are choosing a free time activity or means of transportation significant proportions of the two groups do not choose an option that includes physical activity, this was especially apparent in Kuwait where the majority of the boys consistently indicated that they rode to school rather than walk. It seems that again the students did not incorporate the information in the programme into positive lifestyle changes.

7.14 AAHPERD Health-related Physical Fitness Test:

There were significant improvements on some components of the health-related fitness tests by both groups. The British boys had significantly higher test scores pre-test therefore their improvement post-test was not as significant as that of the Kuwaiti boys. Pre-test fitness levels matched well with the self-reported physical activity levels of the two groups. The UK group indicated higher levels of habitual activity on the questionnaire which was paralleled in their higher test scores. The Kuwaiti boys indicated lower levels of habitual activity which was parallel with their lower fitness test scores pre-test. The significant increases in the Kuwaiti group post-test

scores were more because they had a higher ceiling for improvement than did the UK groups. The improvements in the fitness test scores can be partially attributed to the programme, especially in Kuwait. There were no significant changes in the Kuwaiti boys habitual physical activity patterns which could have had an influence upon improved test results. Even in this short duration the programme significantly increased the boys fitness levels. While caution must be used, the programme seems to have had an impact on the post-test results.

7.15 The Health-related Curriculum:

One of the disadvantages of implementing a research project is that it is usually sponsored for a limited duration. If implemented in a regular class setting by the regular physical education lesson a programme would not have had to be as intensive as was presented here. There would be no need to double up lesson units in order to finish on time which was what happened at the conclusion of the project in the UK. Many of the boys stated that they were interested in the information provided but didn't like losing activity time for more lectures or information sessions. Their opinions of the project were adversely affected because of this loss of activity time.

The analysis of the students responses when interviewed at the end of the programme indicated that they were receptive to being given extra information in physical education as long as it did not interrupt or decrease their activity time. Responses to the actual implementation of the programme in the UK and Kuwait were very different. The physical education lesson structure of the two groups was also extremely different. The UK group was accustomed to being given information during the physical education lesson and were receptive to the programme and the information given orally in class. The Kuwaiti group had been accustomed to a much more open physical education lesson with very little instruction. The programme was not well received in Kuwait and instruction was constantly interrupted for disciplinary matters.

Students in both countries were not pleased to be given handout sheets in physical education no matter how brief. There was no response to the questions posed in the handouts from the UK group and in only one instance three students in Kuwait prepared for physical education by using the handout sheet.

While much of the literature about health-related fitness indicates the need to de-emphasize competition within physical education, the majority of the students in both the UK and Kuwait were more active and enthusiastic during team activities. They were not motivated to do "self-improvement" individual health-related activities and there were a lot of students standing about. Often times in the UK the regular physical education teacher had to urge the students along. In Kuwait I was the main physical education teacher and I too had to constantly encourage the students to stay on task. The students were most active when they set up the health-related activities as a sort of competition. This is in keeping with the types of activities that the students expressed they most preferred in the lifestyle and physical activity questionnaire. Team games were what interested and encouraged participation among the majority of the boys in both countries.

I hold no illusion about the Kuwaiti boys opinions of this project. The majority of the Kuwaiti boys were glad to see the back of me and this programme. I am not sure any programme or researcher would be warmly received by the students. There was such a difference between this programme and this groups regular physical education lesson that the students were shocked. In previous physical education lessons the students were allowed to do what they wanted when they wanted, and now by some twist of fate, these boys had to properly participate as well as learn in physical education. I am sure it was difficult for them, physical education throughout their years of education was always just for fun. There might have been greater success if the programme was of a longer duration with shorter information units and was implemented by the regular teacher. The students saw me as a guest in their lesson and were simply waiting for me to leave so life could go back to normal. There were a small proportion of the students who were interested in the programme from the

beginning. After a certain amount of time passed almost all the students were more cooperative.

In a brief summary of the programme it can be concluded that:

- Students can be taught fundamental health-related information in the physical education lesson. Both groups of students showed improved knowledge test scores post-test. This improvement does not necessitate time consuming detailed lectures.
- Health-related fitness levels can be improved by the teacher constantly involving the students in activities that foster these components. Boys from both groups showed improvement on the AAHPERD fitness test. The Kuwaiti boys post-test results indicated a one minute improvement in the mean score on the one mile walk/run. The boys were very interested in the testing, this can positively foster the students desire to improve his health fitness levels and encourage extracurricular activity in order to improve himself.

- It would be a loss to many students if team games and competition were to be excluded from physical education. The majority of the students enjoyed competition at some level. The teacher can plan for the students to be paired according to physical ability. This was evident in Kuwait where some boys were not interested in the lesson activity. When they were allowed to participate at a lower level on their own they were active throughout the lesson time. It may seem that preparing for various levels of participation will add to the burdens of the teacher, but in actuality it lessens them because there is less time lost on disciplinary measures. Students will remain on task if they enjoy, and succeed, at what they are doing.

7.16 Researcher Reflections and Insights After Study Implementation:

What would I do differently if I could do it over again? There are actually several things within the project which turned out to be much more significant to the project outcomes than the researcher had anticipated.

I believe I would have concentrated more upon the preliminary study. The preliminary study involved a larger subject group which yielded more representative information about the two groups than did the intervention study. If I had the knowledge and experience gained through the intervention study, it is likely that I would have undertaken a more in-depth study of the Kuwaiti students. This point however is moot as the researcher was unaware of the drastic differences in the nature of the physical education lessons of the two countries, which seemed to effect test results, prior to the implementation of the intervention study. Further into the intervention study it became apparent that while the comparison of the two groups was very interesting and informative, the disparity of the groups was vast and an in-depth study of the Kuwaiti group only could have been more beneficial to the researcher and the Kuwaiti students. In future the researcher would attempt to familiarise himself more thoroughly with a subject group before embarking upon a research project.

The validity of the test results included in this research could have been affected by many factors. The researcher acknowledges that the two groups are not always homogeneous in variance. While difference in variance between two groups generally contra-indicates the use of the t-test, the researcher nevertheless elected to use t-test, with caution, to indicate the extent of differences between the two groups. A basic significance level of ($p \leq .05$) was adopted although the level of significance as seen from the value of t, was often well beyond this value. It is essential that the results are treated with caution if group variances are considerably different and the value of t is near the borderline of $t=2.00$. Interpretations made about the mean scores of the two groups when the variances differ greatly are made with discretion. In reflection upon the skewness in some test component results, it might have been wiser for the researcher to use a non-parametric test of median differences rather than

the t-test. The size of the differences in variance were such that the testing procedures can only be used as a rough confirmation of differences or lack of differences in the mean. The variance was affected by obvious cases as discussed in the skinfold measurements and walk/run test results.

There are several ways in which the validity of an instrument can be established; face, content, construct, concurrent and, predictive. Face validity is the simplest form of validity, the major flaw in relying on this type of validity is that it can be very subjective. Content validity involves a much more in-depth examination of the test instrument and the test items are scrutinised to ensure representativeness. *"Test items should represent the educational objectives of the unit"* (Hastad & Lacy, 1994, p. 92). Construct validity is an extension of content validity into the domain of deeper constructs. One method of assessing this type of validity necessitates the researcher locating two groups of subjects which differ significantly on the variable to be tested. The test is considered to be valid if there are significant differences in the two groups' test scores. If the scores are similar the test would be considered invalid. Concurrent validity necessitates the researcher locating a previously validated test instrument which measures the variable to be studied. The researcher then administers the established test and the new test to the same group of students. If the results indicate a high correlation between the two tests, the new test is considered valid. Predictive validity provides the most powerful evidence of validity. *"If an instrument has strong predictive validity, its scores will correlate highly with some type of measure in the future"* (Hastad & Lacy, 1994, p. 93). The major drawback of predictive validity is that it requires longitudinal study of the variable in question, and can be time consuming.

The writer gave close attention to the content validity of the questionnaire and the knowledge test and made every endeavor to show that the content, wording and, administration and presentation (face validity) were appropriate for the two cultures using the tests. Even so there are several wider questions of validity that need to be

addressed in all research projects in order to ensure fair and truthful indications (measurements) of the variables under scrutiny.

Because the researcher sought a school which was willing to participate in the project the intervention study subjects were a convenience sample, not a random sample, this is a factor which affects the generalizability (external validity) of the results. This type of sampling might not be representative of the population; class size, participant motivation, and prior exposure to the information to be presented could not be controlled.

The rate of student participation could also have affected test results. Although the researcher would have preferred to have all students in both groups participate 100% in all sections of the project, it was thought that forcing student participation could be counter-productive and could affect the validity of the results. There were considerable variations in participation rates on test components, most notably the one mile walk/run for the Kuwaiti boys. This could have affected the researchers' interpretation of the test results. The characteristics of the boys and the reasons why those boys who dropped out of the study were not explored. The researcher also had no control over school breaks or the length of the physical education lesson. In Kuwait, the lesson took place twice a week and there was little disruption of the lesson for breaks or other school events. In the UK, there were many breaks in the continuity of the project either for vacation days or other school events. I believe that these frequent breaks led the students to perceive the programme as being longer than it actually was. This 'stop-start' implementation of the programme also seemed to have led to a lack of rapport between the students and the researcher, although language barriers or the students' wariness of a non-British researcher cannot be ruled out. Furthermore the teaching style of the regular instructor and the basic lesson structure may have been very different from the programme presented by the researcher. This was especially true in Kuwait, where the students seemed to have very little direction within physical education. There were several boys in Kuwait who seemed very disgruntled with the change in their

lesson and this may have led them to be less interested in cooperating fully with the researcher. As stated previously, some students, especially in the Kuwaiti group, treated the questionnaire and knowledge test as unimportant and wrote silly answers in the space provided. This lack of interest may have once again manifested itself in a lack of motivation to participate which could have seriously affected the validity of the results.

In an effort to minimise differences in administration of the test instruments, the researcher made a conscious effort to follow the same administrative procedures in both the UK and Kuwait. It was essential to keep testing as consistent as possible and special attention was given to administration procedures, setting, and weather conditions of the tests. To ensure the clarity of the test instruments they were reviewed by experts in physical education in the UK and Kuwait and they were also piloted by groups of students in the UK and Kuwait who had characteristics similar to the proposed study group. The researcher was also present while all test were taken and students were advised to ask for an explanation of any question they were unsure of. While every effort was made to minimise ambiguity within the test instruments, the researcher cannot be 100% certain that all students in the UK and Kuwait interpreted the questions in the same manner. One major difference in the implementation of the project was that the instructor in the UK took an active part in the administration of the tests and in the administration of the programme itself. As the researcher was not legally qualified to teach in the UK it was essential that the regular teacher be in control of the class with the researcher as an assistant. In Kuwait, the researcher was legally able to teach the lesson and the regular instructor chose not participate in the programme. The choice of the instructor to disregard the researcher and the programme may have negatively affected the Kuwaiti students' attitude toward the project. In both the UK and Kuwait the researcher tried to adopt a non-aggressive approach to the project. While I am sure that the students were aware that I was very interested in the programme results, students were never pressurized to conform to my view or to participate against their wishes.

A further threat to the validity of the results could have been the administration of the pre-test. The students may have learned from the pre-test or remembered the questions contained in the pre-test, thereby affecting validity. Similarly the students may have learned from the pre-test administration of the health-related fitness tests. While the researcher discussed with the students the concept of pacing prior to the one mile walk/run, the actual running of the test may have influenced the way in which the students ran in the post-test. Positive or negative perceptions of the energy required to complete the tests could also have affected the students motivation to put forth their best effort in the post-test.

Other factors that could have possibly affected the validity of the results could have been self-consciousness (which was exhibited by the overweight Kuwaiti boys) and quite possibly boredom with the programme. Many of the students seemed to lose interest in the programme as it progressed which may have affected their desire to participate to the best of their ability in the post-test. The researcher tried to be alert to the many factors that could affect the validity of the results and tried to be as fair as possible in setting up test procedures. However, it was not possible in this largely exploratory study to answer the degree to which these factors affected the results. This is an aspect that should be addressed in a future study.

Another problem encountered was the definition of what constitutes physical education. The participating schools' physical education teachers' definition of physical education and the researchers' were markedly different. In the UK this was not apparent prior to the actual implementation of the programme. The researcher had many meetings with the participating teacher and all teaching materials were discussed in advance of the implementation of the curriculum, the researcher was under the impression that the participating teacher was of a similar mind regarding the proposed project. During interviews at the conclusion of the programme the teacher expressed the belief that there was too much work involved and that the students would learn about health and physical activity eventually, there was no need for such instruction within physical education. There was even less acceptance of the

programme in Kuwait. There was very little cooperation between the researcher and the regular physical education teacher. The Kuwaiti teacher was not at all convinced that there was any benefit to be gained from teaching within physical education. The emphasis of physical education in Kuwait was play and release from pressures of 'real' lessons. These attitudes were also shared by the students of the two countries. Physical education was for fun only.

Miles and Huberman (1994) caution researchers that the research project is not as significant to the lives of the subjects as it is to the life of the researcher. That was certainly true in this instance. As one of the UK teachers pointed out, most of the students do not particularly respect any course of study, that includes physical education. I had assumed that my enthusiasm for the project would carry over to the students and teachers, and all concerned would participate to their utmost, this was proved very wrong. The students did not embrace the project with much excitement and did not appreciate the handout sheets in any way. The boys definition of physical education was games. The boys in the UK were not pleased, but were not overly verbal in their dissent. The Kuwaiti boys were significantly more verbal, and they made it exceedingly clear that they were not interested in learning within physical education, and could not be persuaded to participate fully. The lack of enthusiasm for the topic clearly affected the students' motivation in both countries. Lack of motivation also could have seriously affected the students' participation on the tests included within the project. And this would in turn affect the validity of the tests as noted earlier in the limitations sections 5.6 and 6.19.

One section of the project that did not proceed as anticipated by the researcher was the educational information contained in the first part of each unit. The researcher had planned that these units would take no more than five minutes of the lesson time. This was not the case, this divergence from the plan could be put down to the students' lack of dedication to the project. The boys would not pay attention, there were many stops and starts to keep their attention, and a great deal of time was lost on disciplinary matters, this proved to be the case in both countries. In the UK

the regular teacher was very helpful in keeping things going as smoothly as possible, however it was still a difficult task. There was little cooperation by the students in either country with the educational aspects of the programme. There was no response to the handout sheets and the students made it quite clear that they did not intend to do homework for physical education. In Kuwait the researcher had no assistance from the regular teacher during the implementation of the programme. It was extremely difficult for the researcher to keep the students on track when they could perceive their teachers' disinterest in the project, and they knew the researcher had no authority over them. I believe that the information contained in the programme was basic and easy to understand. This was proved to be true from the post-test results of both groups on the knowledge test. A way to counteract the loss of activity time, and still encourage the educational base within physical education, would be for the physical education teacher to liaise with teachers of related subjects. An obvious choice would be biology. The two courses are complementary and would help the students comprehension and retention of the information contained in both lessons. Physical education could be considered practical application of biology. The bodily responses to exercise would be a very good way for the students to understand the reactions of the body to various physical stimuli. Health education is definitely compatible with physical education. In some universities the two disciplines are included in one Health and Physical Education Department, the combination of the two subjects emphasizes their inter-dependence. Home economics could also work cooperatively with physical education. Nutrition plays a vital role in physical fitness, overeating, and excessive fat or sugar intake will negatively affect body composition. A combination of proper nutrition and physical activity positively affects physical fitness, again the collaboration of the two disciplines will help to reinforce the information contained in both lessons.

One teacher in the UK suggested that for the most part the researcher should work as assistant to the regular teacher and be more of an interested observer. This, I see in hindsight, was very valuable advice. I was a guest to some students and an

unwanted intruder to others, this definitely affected student participation and attitudes toward the programme. There were also problems regarding the fact that English is not my mother tongue. The verbal communication between myself and the British boys may have been hampered by my accent, or perhaps the boys opinions of 'foreigners', in the future I would think twice before initiating a similar programme in a country where the native language is other than my own. Language is essential for a good rapport between the students and the researcher, this compatibility can then encourage the students to be more cooperative. I do not believe there was ever a good rapport between the British boys and myself. I do not feel they ever saw me as a member of their group even though I was with them many months.

Two recurring themes from the interviews in both countries was that the information units were good but they hampered activity time; and that there was not enough competition within the programme. Regarding the first statement, the students did not take any responsibility for not doing the minimal amount of work requested of them on the handout sheets, this necessitated doing the work during the lesson. This did indeed seriously curtail the students' activity time, and thereby affected their enthusiasm toward the project. I agree with the students on this point. Perhaps in the future there could be a greater amount of time set out for the project. The cancellation of a lesson, or lessons, for whatever reason, would not result in the doubling up information units when nearing the end of the time allotted the research project, which is what happened during the implementation of this project in the UK. Regarding the second point, from the researchers' observations the students were certainly more active when they designed an activity that had a certain level of competition. The researcher recognises the fact that recent literature stresses the need to eliminate competition in order to encourage greater participation in physical education by all students, however this does seem to disregard that many students enjoy sporting competition. The present researcher believes that it is aggression and bullying within physical activities that needs to be addressed rather than competition itself.

One of the most outstanding findings of the research was the absolute difference between physical education in the UK and physical education in Kuwait. There were great differences in facilities, dedication of the physical education teachers, and attitudes of students. The implementation of the programme in Kuwait revealed there was very little that was comparable between the two groups. The very nature of physical education in the two countries proved to be fundamentally different. Students in the UK attended a physical education lesson with a teacher. Students in Kuwait went to the gymnasium or field and played whatever they wanted, if they wanted, however they wanted. Opinions of the Kuwaiti students and teachers as revealed in the interviews at the conclusion of the programme indicated that there is very little regard for physical activity in or outside of school. Students and teachers said that physical activities were for careless students, who were not responsible about school work, and were basically failures. One has to wonder what the teachers opinions of themselves would be in light of this, are they ignorant failures because they teach physical education? It seems that their career choice is 'out of sync' with their expressed opinion about physically active students. Physical activity seems to be equated with irresponsibility. Many students expressed the opinion that they were too smart to be side tracked by foolish game playing. What was even more astounding was the fact that the physically active, athletic student shared the opinion of the other students and the teachers. He was sure that the only thing going for himself was his physical ability, he said teachers accused him of being too big for his age and of being a trouble maker because he was extremely interested in sport. He said did not believe that he would graduate from school because he was not smart enough so he puts all his efforts into sports. It was very distressing to the researcher that a young person could think of himself in such a way. If a student is physically gifted he should certainly be encouraged to develop it, but teachers and coaches should not classify him as ignorant or troublesome because his ultimate goals lie in area other than academics. There appears to be a need to educate people, young and old alike, that

physical activity is important for everyone and that the physically active student is likely to be as intelligent as any other student in the group.

These reflections and insights gained by the researcher lead him to speculate on methods for improvement and recommendations for change which are covered in the next two sections.

7.17 Recommendations for Change:

- When referring to the way in which the boys spent their time, results from the preliminary study and the intervention study indicate that in both the UK and Kuwait, a great amount of time was spent engaged in sedentary activities. There needs to be more physical education time, this is a priority for both countries. It is very difficult to achieve positive results if the students engage in physical education only once a week. Lessons scheduled only once a week are contrary to all published literature in regard to the amount of physical activity needed to improve physical fitness and health. Often times during the project, in the UK and in Kuwait, physical education time or facilities were taken over for other "more important" school activities. This type of infringement upon PE lessons does not send a positive message to the students. Physical education is fun but not essential, we can drop it now and again and there will be no harm done. It is a very basic problem faced by physical education teachers and will be a difficult issue to address if the PE lesson content remains unchanged.

- It was apparent from the Kuwaiti boys interviews that the physical education teacher must try and include all students in the lesson. Some boys indicated that they were bullied and intimidated by other students and they wanted the teacher to intervene by being present and actually teaching the lesson. It is the responsibility of the teacher to insure that all the students in the class are physically educated, not simply enrolled in physical education. There needs to

be a balance between health-related activities and competitive games. Students must be encouraged to understand the health-related value of activities, however the enjoyment that so many students find in competitive games should not be forgotten. At the risk of sounding redundant, it is possible for teachers to provide instruction and opportunity for both types of activity and often times the two can be combined in one activity which brings the entire class together.

- Interviews with the Kuwaiti teachers indicated that they felt there was little to be taught in physical education. Physical education is a bit of time for the students to play a quick game of ball or to simply sit and relax. Kuwaiti teachers need help to come up to date with current trends in physical education. In-service training days which are prevalent in the UK are not standard practice in Kuwait. The Kuwaiti teachers in this study had not taken any continuing courses in the field of physical education since their graduation in 1968. It is likely that physical education teachers in other schools are not up to date on trends in physical education either. Kuwaiti physical education teachers need to be reminded of the their value as teachers and of the value of their subject.

- During interviews and throughout the intervention study, in both the UK and Kuwait, many students said that much of the information contained in the health-related curriculum was new to them. They did not realise that physical education had an educational base, the same as any other course taught in school. The introduction of basic texts regarding health-related fitness in physical education would help students, parents, teachers, and administrators realise that there is something to be taught and learned in physical education other than games. This could be useful in both the UK and Kuwait. By correlating the physical activity of the lesson with the physiological principles

involved, it is possible to change the perception that many have of the physical education lesson as one of fun and games only.

- As has been indicated in much recent literature about physical education in the UK cross curricular support of the physical education lesson could be very beneficial and welcome addition to the physical education curriculum. If the physical education teacher links physical education with the health education lesson, the biology lesson or the sociology lesson, it will strengthen the students understanding of the subjects as well as increase their comprehension of the value of physical activity. It will also bring the physical education teacher into contact with other teachers within the school. While this may seem unnecessary, there is often a lack of communication between other teachers and physical education teachers. The physical education teacher is in a corner of the school adjacent to the field or gym and is usually very much removed from the main section of the school. This remoteness can perpetuate the perception that a physical education teacher is distinctly different from other teachers.

- The teacher training courses in Kuwait must incorporate Islamic and other Arabic teachings regarding physical activity. If the teachers can explain the value of physical education within the context of a culturally accepted and valued framework there could be greater success and acceptance of the course.
- Kuwait is still very much a religiously oriented country, there is no separation between religion and state. It would be beneficial if teacher education textbooks were revised with the Muslim Arab reader in mind. Most educational texts are merely translated from the original language into Arabic. There is resistance of "Western" ideas which are sometimes seen as foreign influence upon the Muslim society. Encouraging physical activity with the support of religious doctrine will help students understand that a lot of the

conceptions Muslims have about physical activity and Islam are erroneous. It will strengthen their understanding of both subjects.

- The inclusion of girls in more physical activity is very important. Although this study did not include girls, if the boys results can be taken as an indicator the girls are in a far more precarious situation. There is resistance to physical activity for boys as it is seen as frivolous. Opposition to physical activity for girls and women is certainly much more vehement. It can again be associated with culturally unacceptable instruction. Text books portraying girls playing tennis or squash in clothing that is unacceptable in Islamic doctrine only serves to make many people unwilling to allow girls to participate in physical activity. Photographs must illustrate Muslim girls and women engaging in activity appropriately dressed. This may seem simplistic but it is not. Many parents will see a photo of a girl in small shorts playing tennis and assume that is the way in which their child must dress for the activity, and they will refuse her permission to participate. I have come into contact with this problem several times as an instructor of undergraduate age women in Kuwait. It is difficult to convince people that there is no need for the women to dress in a way that they find immoral. The adage, 'a picture is worth a thousand words', certainly holds true.

- The amount of physical activity engaged in outside of school as reported by the Kuwaiti boys in both the preliminary and intervention study indicate the boys might benefit from some sort of organised community centre. Expanded use of existing facilities would be a way to encourage community participation in activity. There is a great loss of opportunity for physical activity when the doors to schools are closed in the evenings and on weekends. These facilities could be made available for the general public for a nominal fee. The uncertain rainy weather in the UK and the hot dusty weather of Kuwait often

curtail physical activity. Indoor clubs are usually private and costly. A scheme in which community members would pay an entrance fee to use facilities at the local schools could be devised. This is type of cooperation between schools and community is already in place in many areas within the UK. With the dual-use scheme the county council supports the school and the local city council supports the after school and weekend activities. The city councils also have use of the school for public use during school holidays. This is a very beneficial and cost effective use of existing facilities.

7.18 Recommendations for Further Study:

- The findings of the preliminary and intervention study regarding Kuwaiti physical activity and fitness levels indicate a national study of the fitness levels of all school age children, both boys and girls is needed. Data collected in a study of this breadth could yield vital baseline information that could be used in many future projects. A study of this type, sponsored by the government could even be implemented yearly at the beginning of the school year. It could assist teachers in constructing a course of study that would be most beneficial for the students. In addition progress or attainment of individual target goals could be rewarded by certificates of achievement or badges or some other age appropriate reward.

- Self-reported data was extremely useful during this study however, there is a need for external monitoring of physical activity patterns of Kuwaiti children. External monitoring can be used to validate the self-reported data in this study. This type of study has been done in the UK and the USA and yields much more specific information about activity levels of children of all ages. This is very helpful because while the self-reported information of teenagers is regarded as credible, the self-reported activity levels of young children is usually suspect. Very young children do not have the same comprehension of time as do older

children. The equipment to implement a study of this nature is available but simply not used.

- Referring to the Kuwaiti data of this study, there are serious implications for the female section of the population. Women in Kuwait are rarely studied, especially in regard to physical fitness. It is a commonly held view that there isn't a need for girls and women to exercise, exercise is a manly pursuit. This is of course a fallacy which can lead to very poor physical fitness levels in girls and women. To encourage physical activity in young girls may positively affect their health as adults. It has been proven that stresses of pregnancy and childbirth are positively effected by physical activity. The bone degenerating disease osteoporosis is also positively affected by physical activity. Exercise also influences CVD risks which increase dramatically in post-menopausal women. There will be a need to teach physical activity to girls and women with religious doctrine for support. This will empower and educate the women as well as the physical education teacher to argue intelligently with those who say that it is against religious codes for females to participate in physical activity (Behbehani, 1992). We must help the female population understand that there are many things that they are able to do which can positively effect their health without going against their religious beliefs.

- As reported during interviews with the Kuwaiti students, the attitude of the teacher is very important as it reflects on the students attitude toward the subject. The self-esteem of physical education teachers would be an extremely interesting area of study. From the results of this study there seems to be a lack of value for the physical education teacher, and a lack of value placed on physical education by the physical education teacher. The Kuwaiti teacher said that there wasn't anything to be taught in physical education and that it was meant to be fun for the students. Is this attitude due to the

teacher's view of the subject or is it a slowly developed way of acting due to the way the physical education lesson is viewed by other teachers and students? The physical education teacher's morale is important to investigate. It is not reasonable to assume that if we do national studies and map out strategies to promote healthy behaviours that there will be success if they are implemented by teachers who are uninterested in the lesson.

- Administrators, other teachers, parents, or significant others, i.e. friends or close associates may have an influence on the students opinions of, or participation in, extra physical activities. It would be of value to examine in depth the ways in which students perceive, and the value they accord physical education and physical activity. We learned from this study that the students liked physical education but they did not carry this farther and incorporate physical activity into their free time.

- Another way to shed light upon the question of who affects whom in regards to activity in physical education is by studying the differences in attitudes and participation levels of Kuwaiti children enrolled in private English or American schools, with attitudes and participation levels of Kuwaiti children in public schools. Is it the 'system' that is in operation in Kuwaiti public schools, or is it the teacher/student/parent attitude that is the major factor?

References

References:

Alexander, J. and Peterson, K. (1972). Cardiovascular Effects of Weight Reduction. *Circulation*, vol. 45, no.2, pp. 310-318.

Al-Hooti, S. & Eid, N. (1984). Nutritional Status in Kuwait: Nutritional Assessment of School Children. Kuwait Institute for Scientific Research. Biotechnology Dept., Food Resources Division.

Allen, F., Stillman, E. and Fritz, R. (1919). Total Dietary Regulation in the Treatment of Diabetes. In Exercise, (Monograph #11). Rockefeller Institute on Medical Research. New York.

Allport, G. (1967). Attitudes, in *Attitude Theory and Management.* Fishbein, M. (ed.). John Wiley and Sons Inc.: New York.

Almond L. (1982). Changing the focus. *British Journal of Physical Education*, vol. 13, no. 5, p. 131.

Almond, L (1987). An exercise policy for schools: do we need one? *The Bulletin of Physical Education*, vol. 23, no. 3, pp. 28-31.

Almond, L (1990). A Health-related Exercise Focus in Physical Education. *The Bulletin of Physical Education*. vol. 26, no. 1, pp. 18-21.

Almond, L (1991). An Open Statement of the P.E. Working Group. *The Bulletin of Physical Education*, vol. 27, no. 1, Spring, pp. 29-33.

Al-Shawi, A (1985). The dietary patterns and food habits of Kuwaiti housewives of three educational levels. *The Educational Journal*: Kuwait University.

AAHPERD American Alliance for Health, Physical Education, Recreation and Dance. (1980). *AAHPERD Health-related Test Manual.* Reston, VA: AAHPERD.

AAHPERD American Alliance for Health, Physical Education, Recreation and Dance. (1984). *AAHPERD Technical Manual-Health-related Fitness Test.* Reston, VA: AAHPERD.

AAHPERD American Alliance for Health, Physical Education, Recreation and Dance. (1985). The National Children and Youth Fitness Study. *Journal of Physical duration, Recreation & Dance, vol.* 56, no. 1, pp. 44-90.

AAHPERD American Alliance for Health, Physical Education, Recreation and Dance. (1987). The National Children and Youth Fitness Study II. *Journal of Physical Education, Recreation & Dance*. vol. 56, no. 9. pp. 147-167.

AAHPERD American Alliance for Health, Physical Education, Recreation and Dance. (1989). *Physical Best: A Physical Fitness Education & Assessment Program.* Reston, VA: AAHPERD.

American Heart Association (1991). *Heart and Stroke Facts.* Author.

American Psychological Association (1985). *Standards for Educational and Psychological Testing.* Washington DC.: Author.

Andersen, L., Rutenfranz, R., Masironi, R. and Seliger, V. (1978). Habitual Physical Activity and Health. *WHO Reg. Pub. European, Series 6.* pp. 105-159.

Angel, A. (1978). Pathophysiologic Changes in Obesity. *Canadian Medical Association Journal*, vol. 119, no. 12, pp. 1401-1406.

Angel, A. and Roncari, D. (1978). Medical Complications of Obesity. *Canadian Medical Association Journal*, vol. 119, no. 12, pp. 1408-1411.

ARAPCS. *Physical Fitness Council Newsletter.* Winter (1987), vol. III, no. 2. Reston, VA: AAHPERD.

Armstrong, N. (1987). Health and fitness programmes in schools: a physiological rationale, Chapter 3, pp. 19-27. In Biddle, S. *Foundations of Health-related Fitness in Physical Education.* London: Ling Publishing House.

Armstrong, N. (1987a). A Critique of Fitness Testing,Chapter 16, pp. 136-138. In Biddle, S. *Foundations of Health-related Fitness in Physical Education.* London: Ling Publishing House.

Armstrong, N, (1989). Children are fit but not active. *Education and Health*, vol. 7, no. 2, pp. 28-32.

Armstrong, N., Balding, J., Gentle, P. & Kirby, B., (1990). Patterns of physical activity among 11 to 16 year old British children. *British Medical Journal*, vol. 301, pp. 203-205.

Armstrong, N., Balding, J., Gentle, P., Williams, J. & Kirby, B., (1990). Peak oxygen uptake and physical activity in 11 to 16 year olds. *Pediatric Exercise Science*, vol. 2, pp. 349-358.

Armstrong, N., Bellew, B., Biddle, S., Bray, S., Gardonyi, P. & Winter, E., (1990). Health-related physical activity in the National Curriculum. *British Journal of Physical Education*, vol. 21, no. 1, p. 225.

Armstrong, N. & Bray, S., (1990). Primary Schoolchildren's Physical Activity Patterns During Autumn and Summer. *The British Journal of Physical Education*, vol. 26, no. 3, pp. 23-26.

Armstrong, N. & Bray, S., (1991). Physical activity patterns determined by continuous heart rate monitoring. Archives of Disease in Childhood.

Armstrong & McManus, (1994). Children's fitness and physical activity- A challenge for physical education. *British Journal of Physical Education*, vol. 25, no. 1, pp. 20-26.

A.S.H.A., (1992). Physical Activity Newsletter, vol. 1, no. 1, May.

Bachman, L., Freschuss, V., Hallberg, D. and Melcher, A. (1972). Cardiovascular Function in Extreme Obesity. *Acta Medica Scandinavica*, vol. 193, pp. 437-445.

Badura, B. (1984). Lifestyle and Health: Some Remarks on Different Viewpoints. *Social Science Medicine, Great Britain*, vol. 19, no. 4, pp. 341-347.

Bailey, D. (1973). Exercise, Fitness and Physical Education for the Growing Child. *Ottawa: Health and Welfare Canada.* pp. 13-27.

Balding, J. (1989). Survey methods as a stimulus to health education in schools - A CASE STUDY. Chap. 27, pp. 300-310. In James, Chris, Balding, John & Harris, Duncan (ed.) 1989. World Yearbook of Education 1989 Health Education. London: Kogan Page.

Balding, J. (1994). Young People in 1993. Schools Health Education Unit: University of Exeter.

Baranowski, T., Tsong, Y., Hooks, P., Cieslik, C. & Nader, P.R. (1987). Aerobic physical activity among third to sixth grade children. *Journal of Developmental and Behavioural Pediatrics.* vol. 13, pp. 203-206.

Barnes, L. (1983). AAFDBI Bringing Fitness to Corporate America. *Physician and Sports Medicine*, vol. 11, pp. 127-133.

Barry, A., Daly, J. & Pruett, E. (1966). The Effects of Physical Conditioning on Older Individuals Capacity, Circulatory-respiratory function and Work Electrocardiogram. *Journal of Gerontology*, vol. 21, pp. 182-191.

Bassey, E.J. & Fentem, P.H. (1981). *Exercise: The Facts.* Oxford: Oxford.

Becker, H.S. (1989). Tricks of the trade. Studies in Symbolic Interaction, vol. 10, pp. 481-490.

Bedworth A.E. & Bedworth D.A. (1992). *The Profession and Practice of Health Education.* Dubuque, IA, USA: Wm. C. Brown Publishers.

Behbehani, K. (1992). Physical education in the state of Kuwait. *The British Journal of Physical Education*, vol. 23, no. 4, pp. 33-35.

Belloc, N. & Breslow, L. (1972). Relationship of physical health status and health practices. *Preventive Medicine*, vol. 1, pp. 409-421.

Belshaw, P. (1982). Setting the scene, mapping the ground and outlining the task. *The role of physical education in the whole curriculum.* DES Regional Course. B.3, 20. Elm Bank Teacher Centre.

Berenson G.S., ed. (1986). *Causation of Cardiovascular Risk Factors in Children.* New York, NY: Raven Press.

Berg, K., Sady, S., Beal, D., Savage, M. and Smith, J. (1983). Developing an Elementary School CHD Prevention Program. *The Physician and SPORTSMEDICINE*, vol. 11, pp. 99-105.

Berg CL, Swanson DJ, and Juhl N. (1992). Total Blood Cholesterol and Contributory Risk Factors in an Adolescent Population. *Journal of School Health*, vol. 62, no. 2, pp. 64-66.

Berkman, L. & Breslow, L. (1983). *Health and Ways of Living: The Alameda County Study.* New York, NY: Oxford University Press.

Best, J.W. (1981). *Research in Education.* New Jersey, Englewood Cliffs: Prentice Hall, Inc.

Biddle, S. (1987). *Foundations of Health-related Fitness in Physical Education.* London: Ling Publishing House.

Biddle, S. (1981). The why of health-related fitness. *The Bulletin of Physical Education*, vol. 17, no. 3, PP 28-31.

Biddle, S. & Fox, K. (1987). A Guide to Health-related Fitness Testing. Chapter 15, pp. 127-135. In Biddle, S., *Foundations of Health-related Fitness in Physical Education.* London: Ling Publishing House.

BJPE : *British Journal of Physical Education*, (1991). *Research Supplement*, no. 9 - Summer.

BJPE : *British Journal of Physical Education*, (1994). vol. 25, no. 2, pp. 7-8.

Blair, S. (1988). Exercise, Health, and Longevity. In Lamb & Murray (eds.), *Perspectives in Exercise Science and Sports Medicine*, vol. 1, Prolonged Exercise, pp. 443-449. Indianapolis, IN.: Benchmark Press.

Blair, S. (1994). Physical activity , fitness, and coronary heart disease. In Bouchard, Claude, Shepard, Roy J., & Stephens, Thomas (Eds.) (1994). *Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement.* Chapter 39, pp. 579-590. Champaign, Il: Human Kinetics Publishers, Inc.

Blair, S., Clark, D., Coreton, K. & Powell, K. (1989). Exercise and fitness in childhood: Implecations for a lifetime of health. In Gisolfi, CV & Lamb, DR, *Perspectives in Exercise Science and Sports Medicine*, vol. 2 Youth Exercise and Sport, p. 402. Indiannapolis, IN: Benchmark Press.

Blair, S. Kohl, H., Paffenbarger, R. Clark, D. Cooper, K. & Gibbons, L. (1989). Physical fitness and all-cause mortality: a prospective study of men and women. *JAMA*, vol. 262, pp. 2395-2401.

Blair, S. Mulder , R. & Kohl, H. (1987). Reaction to 'Secular trends in adult physical activity: Boom or bust?' *Research Quarterly for Exercise and Sport*, vol. 58, pp. 106-110.

Bouchard, C. (1990). Discussion: Heredity, Fitness, and Health. . In Bouchard, C. Shepard, R. Stephens, T. Sutton, J. & McPherson (Eds.) (1990). Exercise, *Fitness, and Health: A Consensus of Current Knowledge*, chapter 14, pp. 147-153. Champaign, Il: Human Kinetics Publishers, Inc.

Bouchard, C. and Shepard, R. (1994). Physical Activity, Fitness, and Health: The Model and Key Concepts. In Bouchard, Claude, Shepard, Roy J., & Stephens, Thomas (Eds.) (1994). *Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement*,Chapter3, pp. 77-88. Champaign, Il: Human Kinetics Publishers, Inc.

Bouchard, C., Shepard, R., & Stephens, T. (Eds.) (1994). *Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement.* Champaign, Il: Human Kinetics Publishers, Inc.

Bradfield, R., Paulos, J. and Grossman, L. (1971). Energy Expenditure and Heart Rate of Obese High School Girls. *American Journal of Clinical Nutrition*, vol. 24, pp. 1482-1488.

Brandon, L. & Evans, R. (1988). Are physical educators physically fit. *Journal of Physical Education Recreation and Dance*, vol. 59, no. 7, pp. 73-75.

Breslow, L. (1990). A Health Promotion Primer for the 1990's. *Health Affairs* (summer) pp. 6-21.

Breslow, L (1990a). Lifestyle, Fitness and Health. In Bouchard, Claude, Shepard, Roy J., Stephens, Thomas, Sutton, John R. & McPherson (Eds.) (1990). Exercise, *Fitness, and Health: A Consensus of Current Knowledge*, chapter 15, pp. 155-163. Champaign, Il: Human Kinetics Publishers, Inc.

Breslow, L. and Enstrom, J. (1980). Persistence of Health Habits and Their Relationship to Mortality. *Preventive Medicine*, vol. 9, no. 4, pp. 469-483.

Brewer, J. & Hunter, A. (1989). *Multimethod research: A synthesis of styles.* Newbury Park, AC: Sage.

Brill, P, Burkhalter, H, Kohl, H, Blair S, & Goodyear, N, (1989). The impact of previous ahtleticism on exercise habits, physical fitness and coronary heart disease factors in middle-aged men. *Research Quarterly for Exercise and Sport*, vol. 60, no. 3, pp. 209-215.

British Association of Advisers and Lecturers in Physical Education (1989). *Physical Education for Ages 5-16: A framework for discussion.* Submission to the Secretaries of State for Education and Science for England and Wales. March 1989.

Brooks, G. & Fahey, T. (1985). *Exercise Phsiology.* New York: Macmillan Publishing Co.

Brown, J., (1991). Staying fit and staying well: Physical fitness as a moderator of life stress. *Journal of Personality and Social Psychology*, vol. 60, no. 4, pp. 555-561.

Buckley, K. et al. (1982). Teaching monitoring of blood pressure to adolescents. *Adolescence*, vol. 17, no. 65, pp. 189-197.

Bullen, B., Reed, R. and Mayer, J. (1964). Physical Activity of Obese and Nonobese Adolescent Girls Appraised by Motion Picture Sampling. *American Journal of Clinical Nutrition*, vol. 14, pp. 211-223.

Burwell, C., Robin, D., Whaley, R. and Bicklemann, A. (1956). Extreme Obesity Associated with Aveolar Hypoventilation--A Pickwickian Syndrome. *American Journal of Medicine*, vol. 21, pp. 811- 818.

Buskirk, E. and Taylor, H. (1957). Maximal Oxygen Intake and its' Relation to Body Composition with Reference to Chronic Physical Activity and Obesity. *Journal of Applied Physiology*, vol. 11, pp. 72-78.

Canadian Fitness and Lifestyle Research Institute (1994). The research file. *CAHPERD Journal*, vol. 60, no. 4, p. 45.

Carey, J.W. (1989). *Communication as culture: Essays on media and society.* Boston: Unwin Hyman.

Casbon, C. & Gibbon, A. (1991). Editorial. *The British Journal of Physical Education*, vol. 22, no. 1, p. 4.

Chaing, B., Perlman, L. and Epstein, F. (1969). Overweight and Hypertension: A Review. *Circulation*, vol. 39, pp. 403-421.

Choquette, G. and Ferguson, R. (1973). Blood Pressure Reduction in "Borderline" Hypertensives Following Physical Training. *Canadian Medical Journal*, vol. 108, pp. 699-703.

Clarke, H. (1976). *Application of Measurement to Health and Physical Education (5th ed.).* Englewood Cliffs, NJ: Prentice Hall.

Clarke, H. (ed.) (1979). Update: Physical Activity and Heart Disease. *Physical Fitness Research Digest*, vol. 9., pp. 1-23.

Clarke, H. & Clarke D. (1987). *Application of Measurement to Physical Education 6th ed.* New Jersey, USA: Prentice-Hall, Inc.

Coghlan, A. (1991). Britain's deadly diet. *New Scientist*, vol. 130 no. 1768, pp. 26-30.

Cohen, L. & Manion, L. (1994). *Research Methods in Education. 4th ed.* London: Rutledge.

Comer, S. & Sparkes, A. (1992). Governors, Grant Maintained Status, and Physical Education: Some Insights from a Case Study. *The Bulletin of Physical Education*, vol. 28, no. 1, pp. 7-12.

Cooper, K. (1968). *Aerobics.* Philadelphia, PA: M. Evans and Co.

Cooper, K. (1982). *The Aerobic Program for Total Well-Being.* New York: M. Evans and Co , Inc.

Cooper, K., Pollock, M., Marin, R., White, S., Linnerud, A. and Jackson, A. (1976). Physical Fitness Levels vs. Selected Coronary Risk Factors. *Journal of American Medical Association*, vol. 236, no, 2, pp. 166-169.

Corbett , D. (1990). *AAHPERD Update*, Nov./ Dec., 1990, p. 2.

Corbet, D., (1995). President's Message: The Role of Professional Leaders in the Social Criticism of Sport and Physical Activity. *International Council for Health, Physical Education, Recreation, Sport and Dance (ICHPER-SD) Journal*, vol. 31, no. 2, p.2.

Corbin, C. (1986). Fitness is for Children: Developing Lifetime Fitness. *Journal of Physical Education Recreation and Dance*, vol. 57, no. 5, pp. 82-84.

Corbin, C., Fox, K., and Whitehead, J. (1987). Fitness for a lifetime. Chapter 1, pp. 8-12. In Biddle, S. (1987). *Foundations of Health-related Fitness in Physical Education.* London: Ling Publishing House.

Costas, R., Garcia-Palmieri, M., Nazario, E. and Sorlie, P. (1978). Relation of Lipids, Weight, and Physical Activity to Incidence of Coronary Heart Disease: The Puerto Rico Study. *American Journal of Cardiology*, vol. 42, no. 4, pp. 653-658.

Costill, D., Daniels, J. & Evans, W., (1976). Skeletal Muscle Enzymes and Fiber Composition in Male and Female Athletes. *Journal of Applied Physiology*, vol. 40, no. 2, pp. 149-154.

Culpepper, M. & Morrison, T. (1987). Fitness, Exercise and Health Behavior: A Brief Review. Alabama Medicine, *The Journal Of MASA*, vol. 56, no. 7, pp. 24-28.

Cureton, K. (1982). Distance Running Performance Tests in Children. Waht Do They Mean? *Journal of Physical Education, Recreation and Dance*, vol. 53, no. 7, pp. 64-66.

Davies, C., Barnes, C. and Godfrey, S. (1972). Body Composition and Maximal Exercise Performance in Children. *Human Biology*, vol. 44, pp. 195-214.

Deal R.N. (1975). Assessment and Testing in the Secondary School, Schools Council Examinations Bulletin 32 (Evans/Methuen Educational, London) UK.

DeLuca, J.R., ed. (1981). *Alcohol and Health: Fourth Special Report to the US Congress.* Rockville, Maryland: National Institute on Alcohol Abuse and Alcoholism. USDHHS publication no. (ADM) 81-1080.

Department for Education in England and Wales (1995). *Physical Education in the National Curriculum.* London: HMSO.

Department of Education and Science (1989). *Physical education from 5 to 16, Curriculum matters an HMI series.* London: HMSO.

Department of Education and Science (1991). Physical Education in the National Curriculum. London: HMSO.

Department of Education and Science and the Welsh Office (1992). Physical Education in the National Curriculum. London: HMSO.

Denzin, N. and Lincoln, Y. (1994). *The Handbook of Qualitative Research.* London: Sage.

DeWolfe, J. and Jack, E. (1984). Weight Control in Adolescent Girls: A Comparison of the Effectiveness of Three Approaches to Follow-up. *Journal of School Health,* vol. 54, no. 9, pp. 347-349.

DHSS (1976). *Prevention and health: Everybody's business.* London: HMSO.

Dignan, M. & Carr, P. (1981). *Introduction to Program Planning: A Basic Text for Community Health Ed.* Philadelphia: Lee and Febiger.

Dishman, R.K. (1982). Compliance/Adherence in Health-related Exercise. *Health Psychology*, vol 1, pp. 237-267.

Dishman, R.K. (1986). Exercise Compliance: A new view for public health. *The Physician and SPORTSMEDICINE*, vol. 14, pp. 127-145.

Dishman, R.K. (1987). Exercise adherence and habitual physical activity. In Morgan, W.P. & Goldstein, S.E. (Eds.) *Exercise and Mental Health.* Washington DC: Hemisphere.

Dishman, R (1988). Supervised and free-living physical activity: no differences in former athletes and non-athletes. *American Journal of Preventive Medicine*, vol. 4, pp. 153-160.

Dotson, C. (1988). Health Fitness Standards- Aerobic Endurance. *Journal of Physical Education Recreation and Dance*. vol. 7, no. 7, pp. 26-31.

Dowling, F. (1987). A health focus within physical education, Chapter 2, pp. 13-18. In Biddle, S. (Ed) *Foundations of Health-Related Fitness in Physical Education.* London: Ling Publishing House.

Doxiadis, C. (1967). A Life in the Year 2000. *National Education Association Journal*, vol. 6 ,no. 8, pp. 12-14.

Enos, W., Holmes, R. and Beyer, J. (1953). Coronary Disease Among U.S. Soldiers Killed in Korea. *Journal of American Medical Association (JAMA)*, vol. 152, p 1090.

Epstein, L., Wing, R., Penner, B. and Kress, M. (1985). Effect of Diet and Controlled Exercise on Weight Loss in Obese Children. *Journal of Pediatrics*, vol. 107, no. 3, pp. 358-361.

Epstein, L., Valoski, A., Wing, R., McCurley, J. (1990). Ten-Year Follow-up of Behavioral, Family-Based Treatment for Obese Children. *Journal of American Medical Association (JAMA)*, vol. 264, no. 19, pp. 2519-2523.

Evans, J. (1990). Defining a subject: the rise and rise of the new Physical Education? *British Journal of Sociology of Education*, vol. 11, no. 2, pp. 155-169.

Farquhar, J. (1978). *The American way of life need not be hazardous to your health.* New York, NY: W.W. Norton & Company.

Feelin' Good (1990). Feeling' Good book series. Reston, VA: AAHPERD.

Felts, M., Tavasso D., Thomas C., & Dunn, P. (1992). Adolescents Perceptions of Relative Weight and Self-Reported Weight Loss Activities. *Journal of School Health*, vol. 62, no. 8, pp372-376

Fixler, D. (1978). Epidemiology of Childhood Hypertension, Chapter 9. in Strong, W. (Ed.) *Atherosclerosis: It's Pediatric Aspects.* New York: Grunne & Stratton.

Flick, U. (1992). Triangulation revisited: Validation or alternative? *Journal for the Theory of Social Behaviour*, vol. 22, pp. 175-198.

Forbes, G.B. (1975). Prevalence of obesity. In G.A. Bray (Ed.) Obesity in Perspective, vol. 2. USDHEW Publication no. (NIH) 75-708. Washington D.C.: US gov't Printing Office.

Fox, K. (1994). Understanding Young People and their decisions about Physical Activity. *The British Journal of Physical Education*, vol. 25, no. 1,pp. 15-19.

Fox K., & Biddle S., (1987). Health-related fitness testing in schools - philosophical and psychological implications. *Bulletin of Physical Education*, vol. 23, no. 1, pp. 28-39.

Fox, K. & Corbin, C., (1987). Cardiovascular Fitness and the Curriculum. Chapter 4, pp. 30-36. In Biddle, S. (Ed) *Foundations of Health-Related Fitness in Physical Education*. London: Ling Publishing House.

Fox, K. & Whitehead, J. (1987). Student-Centred Physical Education, pp. 94-102. In Biddle, Stuart ed. (1987). *Foundations of Health-related Fitness in Physical Education*. London: Ling Publishing House.

Fraenkel, J.R. & Wallen, N.E. (1993). *How to Design and Evaluate Research in Education.* : New York, USA: McGraw-Hill Publishing Co.

Frankfort-Nichmias C. & Nachmias, D. (1992). Research Methods in the Social Sciences. London: Edward Arnold.

Franklin, B., Buskirk, E., Hodgson, J., Gahagan, H., Kollias, J. and Mendez, J. (1979). Effects of Physical Conditioning on Cardiorespiratory Function, Body Composition and Serum Lipids in Relatively Normal-weight and Obese Middle-aged Women. *International Journal of Obesity*, vol. 3, pp. 97-109.

Frith, D.S. & Macintosh, H.G. (1984). *A Teacher's Guide to Assessment.* : Cheltenham: Stanley Thornes Ltd.

Froelicher, V. and Oberman, A. (1972). Analysis of Epidemiologic Studies of Physical Inactivity as Risk Factors for Coronary Artery Disease. *Progress in Cardiovascular Disease*, vol. 15, pp. 41-65.

Gay, L. R. (1981). *Education Research Competencies for Analysis & Application 2nd ed.* Columbus, Ohio, USA: Charles E. Merrill Publishing Co.

Getchell, B. (1979). *Physical Fitness: A Way of Life.* New York, NY: John Wiley and Sons, Inc.

Getchell, B. (1992). *Physical Fitness: A Way of Life.* New York, NY: John Wiley and Sons, Inc.

Gill JS, Zezulka AV & Shipley MJ (1986). Stroke and Alcohol Consumption. *New England Journal of Medicine*, vol. 315, pp. 1041-1046.

Gilliam, T.B. (1982). Exercise Programs for Children: A Way to Prevent Heart Disease. *The Physician and SPORTSMEDICINE*, vol. 10, pp. 96-108.

Gilliam, T., Katch, V., Thorland, W., (1977). Prevalence of Coronary Heart Disease Risk Factors in Active Children, 7 to 12 Years of Age. *Medicine and Science in Sports*, vol 9, pp. 21-25.

Ginsberg-Fellner, F., Jagendorf, L., Carmel, H., & Harris, T. (1981). Overweight and obesity in preschool children in New York City. *The American Journal of Clinical Nutrition*, vol. 34, pp. 2236-2241.

Glueck, C., Kelly, K. & Mellies, M., (1978). Hypercholesterolemia and Hyper-alpha-lipoprotiemia in School Children. *Pediatrics*, vol. 62, no. 4, pp. 478-487.

Glynn, T. (1989). Essential Elements of School-Based Smoking Prevention Programs. *Journal of School Health*, vol. 59, no. 5. pp. 181-188.

Godin, G. and Shephard, R., (1984). Normative Beliefs of School Children Concerning Regular Exercise. *Journal of School Health*, vol. 54, no. 11, pp. 443-445.

Goldblum, R., (1979). Obesity in Childhood. *The Child and Physical Activity*, edited by R.C. Goode and R. Volpe. Toronto: Ontario Heart Foundation, pp. 55-70.

Griffiths, B. & Cullingford, S. (1990). 'What's in it for our kids'? - Sherborne movement, an approach for all pupils. *The Bulletin of Physical Education*, vol. 26, no. 3, pp. 13-15.

Gronlund, M.E. (1976). *Measurement and Evaluation in Teaching.* Canada: Macmillan Publishing Co., Inc.

Hage, P. (1982). New Fitness Test Resisted by PCPFS. *The Physician and Sports Medicine*, vol. 10, Feb. p. 29.

Hage, P. (1983). AAHPERD to Decide on New Fitness Test. *Physician and Sports Medicine*, vol. 11, Apr. p. 19.

Hagberg, J. and Seals, D. (1986). Exercise Training and Hypertension. *Acta. Med. Scandia. Suppl.*, vol. 711, pp. 131-136.

Harlen, Wynne. (1994). Developing Public Understanding of Education- a role for educational researchers. *British Educational Research Journal*, vol. 20, no. 1, PP3-16..

Harlen, W., (1994a). Round-table on Quality in Educational Research, BERA Conference, Oxford. Saturday, 10 September 1994, afternoon. Position paper, 'The concept of quality in educational research'.

Harris, J. (1991). Your Questions Answered. *The Health Education Authority: Health and Physical Education Project.* June, p. 14.

Harris, J. & DelGrande, B. (1986). The need for hypertension prevention in school curriculum. *The Oregon Journal of Health, Physical Education, Recreation and Dance*, January, 11-15.

Harris, J. & Elbourn, J. (1992). Highlighting health related exercise within the national curriculum. *British Journal of Physical Education*, summer, vol. 23, no. 2, pp. 5-9.

Haskell, W. (1984). Overview: Health Benefits of Exercise. *Behavioral Health: A Handbook of Health Enhancement and Disease Prevention*, chapter 28. New York: John Wiley and Sons.

Haskell, W., Montoye, H. and Orenstein, D. (1985). Physical Activity and Exercise to Achieve Health-related Physical Fitness Components. *Public Health Reports*, vol. 100, pp. 202-212.

Hastad D.N. & Lacy A.C. (1994). *Measurement and Evaluation in Physical Education and Exercise Science*. Arizona, USA: Gorsuch Scarisbrick Publishers.

Haywood, (1991). The role of physical education in the development of active lifestyles. *Research Quarterly for Exercise and Sport*, vol. 62, no. 2, pp. 151-156.

Hein, F.V. & Ryan, A.J. (1960). The Contribution of Physical Activity to Physical Health. *Research Quarterly*, vol. 31, pp. 263-285.

Henerson M.E., Morris L.L., Fitz-Gibbon (1987). *How to Measure Attitudes*. London: SAGE Publications.

HMSO (1991). *The Health of the Nation: Document for Health in England.* A Consultative Document for Health in England. Printed in the UK for HMSO Dd 0506870 5/91 C200 51-7958.

HMSO (1992). *The Health of the Nation: A Strategy for Health in England.* Printed in the UK for HMSO.

Horton, ES (1988). Role and management od exercise in diabetes mellitus. *Diabetes Care*, vol, 11, no. 2, pp. 201-211.

Hovell M, Buskirk J, Sharkey R & McLure J (1978). An Evaluation of Elementary Students Voluntary Physical Activity During Recess. *Research Quarterly*, vol. 49, no. 4, pp. 460-474.

Hunsicker, P. (1959). "National Norms for Fitness". Report of the 7th National Conference on Physicians and schools. Chicago: American Medical Association.

Hunsicker, P. and Reiff, G. (1958-65). Comparison of youth fitness, 1958-65." Cooperative Research Project No. 2418. Washington, D.C: U.S. Office of Education.

Hunsicker, P. and Reiff, G. (1986). "Comparison of Youth Fitness, 1958-65-75." Research contract #OEC-0-74-9332. U.S. Office of Education, Washington, D.C.

Huttunen, N., Knip, M. and Paavilainen, T. (1986). Physical Activity and Fitness in Obese Children. *International Journal of Obesity*, vol. 10, pp. 519-525.

Johnson, M., Burke, B. and Mayer, J. (1956). Relative Importance of Inactivity and Overeating in the Energy Balance of Obese High School Girls. *American Journal of Clinical Nutrition*, vol. 14, pp. 37-44.

Johnson, B. and Nelson, J. (1969). *Practical Measurements for Evaluation in Physical Education.* Minneapolis: Burgess.

Johnson B.L. & Nelson J.K. (1986). *Practical Measurements for Evaluation in Physical Education 4th ed.* New York USA: Macmillan.

Jones, C. and Bate, D., (1990). Health Relate Fitness and Physical Education: Compatibility explored. *The Bulletin of Physical Education*, vol. 26, no. 2, pp. 5-11.

Kahn, H. (1963). The Relationship of Reported Coronary Heart Disease Mortality to Physical Activity of Work. *American Journal of Public Health*, vol. 53, 1058-67

Kamiyole, TO (1993). Physical Educators' Albatross in African Muslim Societies. *International Journal of Physical Education*, vol. 30, no. 2, pp. 29-31.

Kanel WB, (1983). An overview of risk factors for cardiovascular disease. In Kaplan NM & Stamler J (eds.): Prevention Of Coronary Heart Disease: Practical Management of Risk Factors. Philadelphia: WB Sanders.

Katch, F. and McArdle, W. (1977). *Nutrition, Weight Control and Exercise.* Boston: Houghton Mifflin.

Kenrick, M., Ball, M. and Canary, J. (1972). Exercise and Weight Reduction in Obesity. *Arch Phys Med Rehabilitation*, vol. 53, pp. 323-327.

Kirkpatrick, B. & Buck, M. (1995). Ultra Physical Education- Looking to the Future. *ICHPER-SD Journal*, vol. 31, no.2, pp. 34-37.

Klesius, S. (1968). Reliability of the AAHPERD Youth Fitness Test items and Relative Efficiency of the Performance Measure. *Research Quarterly*, vol. 39, pp. 809-811.

Kohl H, Blair S, Paffenbarger R Jr., Macera C, & Kronenfeld J. (1988). A mail survey of physical activity habit as relatedn to measured physical fitness. *American Journal of Epidemiology*, vol. 127, no.6, pp. 1228-1239.

Kramer HH, Majewski F & Trampisch HJ (1987). Malformation patterns in children with congenital heart disease. *American Journal of Disabled Children*, vol. 141, pp. 789-795.

Kraus, H. and Hirschland, R. (1953). Muscular Fitness and Health. *Journal of Health, Physical Education and Recreation*, vol. 24, pp. 17-19.

Krause, H. (1988). Unfit Kids: A call to action. *Contemporary Pediatrics*, vol. 5, pp. 18-30.

Kuh, D.J.L. & Cooper, C. (1992). Physical activity at 36 years: patterns and childhood predictors in a longitudinal study. *Journal of Epidemiology and Community Health*, vol. 46, no. 2, pp. 114-119.

Kuller, L. (1976). Epidemiology of Cardiovascular Disease: Current Perspectives. *American Journal of Epidemiology*, vol. 104, no. 4, pp. 425-456.

Kumpfer K & Turner C (1991). Alvarado: A community change model for school health promotion. *Journal of Health Promotion*, vol. 22, no. 2, pp. 94-110.

Kuwait Ministry of Education (1988). *Kuwait: National Curriculum.* Author.

Kuwait Ministry of Information (1986). *Kuwait: Facts and Figures.* Author.

Kuwait Ministry of Planning (1985). *Annual Statistical Abstract: 1985.* Author.

Kuwait Ministry of Planning (1987). *Annual Statistical Abstract: 1987.* Author

Kuwait Ministry of Planning (1992). *Annual Statistical Abstract: 1987.* Author.

Leon, A., Conrad, J., Hunninglake, D. and Serfass, R. (1979). Effects of a Vigorous Walking Program on Body Composition, and Carbohydrate and Lipid Metabolism of Obese Young Men. *American Journal of Clinical Nutrition*, vol. 32, no. 9, pp. 1776-1787.

Levi-Strauss, C. (1966). *The Savage Mind, 2nd ed.*. Chicago: University Press.

Likert, R. (1932). A Technique for the Measurement of Attitudes. Archives of Psychology, no. 140.

Lin, N. (1976). *Foundations of Social Research.* NewYork, NY: McGraw-Hill

Linn, R.L. (1986). Quantitative methods in research teaching. In M.C. Wittrock (Ed.) *Handbook of Research on Teaching.(3rd ed.)* pp. 92-118. New York: Macmillan.

Locke, L.F. (1989). Qualitative research as a form of scientific inquiry in sport and physical education. *Research Quarterly for Exercise and Sport*, vol. 60, no. 1, pp. 1-20.

Lohman, T. (1982). Measurement of Body Composition in Children. *Journal of Physical Education, Recreation and Dance*, vol. 53, no. 7 pp. 67-70.

Lohman, T., Boileau, R. and Massey B. (1975). Prediction of Body Composition in Young Boys From Skinfold Thickness and Body Weight. *Human Biology*, vol. 47, no. 3, pp. 245-262.

Mager R (1964). *Preparing Instructional Objectives.* Belmont, CA: Fearon Publishers Inc..

Martens, R. (1975). *Social psychology and physical activity.* New York: Harper and Row.

Martens, F. (1982). Daily Physical Education- A boon to Canadian Elementary Schools. *Journal of Physical Education, Recreation and Dance*, vol. 53, no. 3, pp. 55-58.

Mason J. & McGinnis J., (1990). " Healthy People 2000" An Overview of the National Health Promotion and Disease Prevention Objectives. *Public Health Rep.*, vol. 105, no.5, pp. 441-446.

Matarazzo, J., (1984). Behavioral Health: A 1990 Challenge for the Health Sciences Professions. In *Behavioral Health: A Handbook of Health Enhancement and Disease Prevention*, chapter 1. New York: John Wiley and Sons.

Matter, S., Weltman, A. and Stamford, B. (1980). Body Fat Content and Serum Lipid Levels. *Journal of the American Dietetic Association*, vol. 77, no. 2, pp. 149-152.

McArdle, W., Katch, F. and Katch, V. (1981). *Exercise Physiology: Energy, Nutrition and Human Performance.* Philadelphia: Lea & Febiger.

McCafferty, I. (1979). Health education in the education system. In D.C. Anderson (ed.). *Health Education in Practice.* London: Croon Helm.

McGammon, R. (1970). *Human Growth and Development*. Springfield, Il: C.C. Thomas.

McGovern, P. (1985). Teacher Attitudes Toward Pupil Profiling: The Development, Validation and Use of An Attitude Scale. Unpublished Master Thesis, University of Bath, Bath, UK.

McKenzie, J. (1988). Twelve Steps in Developing a Schoolsite Health Education/Promotion Programme for Faculty and Staff. *Journal of School Health*, vol. 58, no. 4, pp. 149-153.

Michaud, T.J. & Andres, F.F. (1990). Should physical education programs be responsible for making our youth fit? *Journal of Physical Education Recreation and Dance*, vol. 61, no. 6, pp. 32-35.

Miles, M. and Huberman, M. (1994). An expanded sourcebook qualitative data analysis, 2nd ed. London: Sage.

Ministry of Public Health-Kuwait (1981). Nutrition Status Assessment of Adult (Kuwaitis). Preventive Health, Nutrition Unit.

Mitchell, S. (ed.) (1973). Symposium on Prevention of Atherosclerosis at the Pediatric Level, Including Identification of Potential Risks and Prophylaxis. *American Journal of Cardiology*, vol. 31, pp. 539-594.

Morgan, W. (1994). Physical Activity, Fitness and Depression. In Bouchard, Claude, Shepard, Roy J., & Stephens, Thomas (Eds.) (1994). *Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement*. Chapter 58, pp. 851-866. Champaign, Il: Human Kinetics Publishers, Inc.

Morris, H. (1991). The Role of School Physical Education in Public Health. *Research Quarterly for Exercise and Sport (RQES)*, vol. 62, no. 2, pp. 143-147.

Morris, J., Chave, S., Adam, C., Sirey, C., Epstein, L. and Sheehan, D. (1973). Vigorous Exercise in Leisure-time and the Incidence of Coronary Heart-disease. *Lancet*, vol. 1, pp. 333-339.

Morris, J., Everitt, M., Pollard, R. and Chave, S. (1980). Vigorous Exercise in Leisure Time: Protection Against Coronary Heart Disease. *Lancet*, vol. 2, pp. 1207-1210.

Muecke, L., Simons-Morton, B, Wei Huang, I. & Parcel, G., (1992). Is childhood obesit associated with high-fat foods and low physical activity? *Journal of School Health*, vol. 62, no. 1, pp. 19-23.

Murdoch, E. (1991). Physical Education and the National Curriculum. *The British Journal of Physical Education*, vol. 22, no. 1, p. 22-25.

NASPE (1990). *The Physically Educated Person.* Reston , VA.: AAHPERD.

NASPE. (1992). Health objectives for the nations. Participation of high school students in school physical education - United States, 1990. *NASPE News,* issue 32.

NASPE (1995). Shape up America. NASPE News, issue 42.

National Curriculum Council (1992). *Physical Education Non-statutory Guidance.* York: National Curriculum Council.

National Heart, Lung and Blood Institute (1982). *Fact-book for fiscal year 1982.* National Heart, Lung and Blood Institute: Bethesda, MD.

Nelson, C., Treicher, P.A., & Grossberg, L. (1992). Cultural Studies, pp. 1-16. In L. Grossberg, C. Nelson, & P.A. Treichler (Eds.) *Cultural Studies.* New York: Routledge.

O'Donnell, M (1987). Definition of Health Promotion. *American Journal of Health Promotion,* vol. 1, no. 1, pp. 4-5.

Office for Standards in Education (1993). *Physical Education, Key Stages 1,2 and 3, First Year, 1992-93. The Implementation of the curricular requirements of the Education Reform Act.* A report from the Office of Her Majesty's Chief Inspector of Schools: London.

Ostro, H. (1984). The importance of being earnest and a good role model. *Scholastic Coach,* vol. 53, pp. 6-12.

Paffenbarger, R. and Hale, W. (1975). Work Activity and Coronary Heart Mortality. *New England Journal of Medicine,* vol. 292, no. 11, pp. 545-50.

Paffenbarger, R. and Hyde, R. (1980). Exercise as Protection Against Heart Attack. *New England Journal of Medicine,* vol. 302, no. 18, p.1026-27.

Paffenbarger, R., Hyde, R., Wing, A. and Hsieh, C. (1986). Physical Activity, All-Cause Mortality, and Longevity of College Alumni. *The New England Journal of Medicine,* vol. 314, no. 10, pp. 605-613.

Paffenbarger, R., Hyde, R., Wing, A., Lee, I., & Kampert, (1994). Some interrelations of physical activity, physiological fitness, health, and longevity. Chapter 7, pp. 119-133. In Bouchard, Claude, Shepard, Roy J., & Stephens, Thomas (Eds.) (1994). *Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement.* Champaign, Il: Human Kinetics Publishers, Inc.

Paffenbarger, R., Wing, A. and Hyde, R. (1978). Physical Activity as an Index of Heart Attack in College Alumni. *American journal of Epidemiology,* vol. 108, no. 3, pp. 161-175.

Pangrazi, Robert P. & Corbin, Charles B. (1994). *Teaching Strategies for Improving Youth Fitness, 2nd ed.* Reston, VA, USA: AAHPERD.

Parcel G, Simons-Morton B, O'Hara N, Baronowski T, Kolbe L & Bee D (1987). School promotion of healthful diet and exercise behavior: An integration of organizational change and social learning theory interventions. *Journal of School Health*, vol. 57, no. 4, pp. 150-156

Parcel G, Simons-Morton B, O'Hara N, Baronowski T & Wilson B (1989). School promotion of healthful diet and physical activity: Impact on learning outcomes and self-reported behavior. *Health Education Quarterly*, vol. 16, no. 2, pp. 181-199.

Pate, R. (1983). A New Definition of Youth Fitness. *The Physician and Sports Medicine*, vol. 11, pp. 77-83.

Pate, R. (1988). The evolving definition of physical fitness. *Quest*, vol. 40, no. 3, pp. 174-179.

Pate, R. and Blair, S. (1978). Exercise and the Prevention of Atherosclerosis: Pediatric Implications, chapter 13, in Strong, W. (Ed.): *Atherosclerosis: It's Pediatric Aspects.* New York: Grune & Stratton.

Pate, R. and Corbin, C. (1981). Health-related Physical Fitness: Implications for Curriculum. *Journal of Physical Education, Recreation and Dance*, vol. 52, no. 1, pp. 36-38.

Pate, R. and Hohn, R. (1994). *Health and Fitness Through Physical Education.* Champaign, IL: Human Kinetics.

Patrick, K., Sallis, J., Long, B., Calfas, K., et al. (1994). A New Tool for Encouraging Activity: Project Pace. *The Physician and SPORTSMEDICINE*, vol. 22, no. 11, pp. 45-55.

Paul, O. (1982). Multiple Risk Factor Intervention Trial: Risk Factor Changes and Mortality Results. *Journal of American Medical Association*, vol. 248, pp. 1465-1477.

PCPFS Newsletter (1986). May, no 2. The President's Council on Physical Fitness and Sports, Washington, D.C. 20001.

PEA (Physical Education Association, Curriculum Committee, Chairperson-Carolyn Jones) (1994). Physical Education in the National Curriculum - Draft Revised Order (SCAA) April 1994. *The British Journal of Physical Education*, vol. 25, no. 3, pp. 5-6.

Penney, D. & Evans, J. (1994). It's Just Not (And Not Just) Cricket. *British Journal of Physical Education*, vol. 25, no. 3, pp. 9-12.

Peters, D. (1994). Body fatness and fat distribution in children and adolescent- Cause for concern. *The British Journal of Physical Education,* vol. 25, no. 3, pp. 18-19.

Phelps, J. (1987). Physical Activity and Health Maintenance- Exactly What Is Known. *Western Journal of Medicine*, no. 146, no. 2, pp. 200-206.

Plowman, S., and Falls, H. (1978). AAHPERD Youth Test Revision. *Journal of Physical Education and Recreation*, vol. 49, no. 9, pp. 22-24.

Pollock, M. and Jackson, A. (1977). Body Composition: Measurement and Changes Resulting from Physical Training. In Proceedings of the National College Physical Education Association for Men and Women, Orlando, FL.

Powell, K & Dysinger (1987). Childhood participation in organized school sports and physical education as percursors of adult physical activity. *American Journal of Preventive Medicine*, vol. 3, no. 5, pp. 276-281.

Powell, K., Thompson, P., Casperson, C. and Kendrick, J. (1987). Physical Activity and the Incidence of Coronary Heart Disease. *Annual Review Public Health*, no. 8, pp. 253-287.

Pratt, D. (1980). Curriculum Design and Development. New York: Harcout Brace Jovanovich, Publishers.

Rink, J. (1992). The Plan and the Reality. *JOPERD*, vol. 63, no. 7, pp. 67-68.

Robbins, G., Powers, D. & Burgess, S. (1994). *A Wellness Way of Life.* Dubuque, IA: Wm C. Brown Communications, Inc..

Roberts, F.s (1986). Physical Education Makes Winners. *Parents*, May, pp. 64-65.

Rogers, F. (1985). Physical (and?) (or?) Health Education. *Health Education*, vol. 16, no. 2, pp. 59-64.

Roman, O., Camuzzi, A., Villalon, E. and Klenner, C. (1981). Physical Training Program in Arterial Hypertension: A Long-term Prospective Follow-up. *Cardiology*, vol. 67, no. 4, pp. 230-243.

Ross, J. & Gilbert, G. (1983). The national children and youth fitness study: A summary of findings. *The Journal of Physical Education and Recreation, (suppl)* pp. 45-50.

Ross, J.G., Dotson, C.O. & Gilbert, C.G. (1985). The national children and youth study. Are kids getting appropriate activity? *Journal of Physical Education, Recreation and Dance*. vol. 56, no. 1, pp. 82-85.

Rossner, S. and Hallberg, D. (1978). Serum Lipoproteins in Massive Obesity. *Acta Medica Scandinavica*, vol. 204, no. (1-2) pp. 103-110.

Rowland, T. (1981). *Physical Fitness in Children: Implications for The Prevention of Coronary Artery Disease.* Year Book Medical Publishers, Inc.

Safrit M.J. & Wood T.M. (1989). *Measurement Concepts in Physical Education and Exercise Science.* Illinois, USA: Human Kinetics Books.

Sallis, J. & Patrick, K.. (1994). Physical Activity Guidelines for Adolescents: Consensus Statement. *British Journal of Physical Education, Research Supplement*, no. 15, Winter. pp. 2-7.

Salmon, A. (1992). The Implications of a Physically Active Society. *An invited paper presented to the Health Education Authority.* June 30, 1992.

Schrott, H., Clarke, W., Abrahams, P., Wiebe, D., and Lauer, R. (1977). Prevalence of Coronary Heart Disease in Relatives of Hypertriglyceridemic School Children. *Atherosclerosis IY*, p 506.

Seals, D. and Hagberg, J. (1984). The Effects of Exercise Training on Hypertension: A Review. *Med Sci Sports Exercise*, vol. 16, no. 3, pp. 207-215.

Secondary Heads Association (1991). *Enquiry into the provision of PE in secondary schools.* Aylesbury, Secondary Heads Association.

Seefeldt, V. (1984). Physical Fitness in Preschool and Elementary School-aged Children. *Journal of Physical Education, Recreation and Dance*, vol. 55, no. 9, pp. 33-30.

Sharkey, B (1990). *Physiology of Fitness, Third ed..* Champaign, IL: Human Kenitics Publishers.

Shepard, R.J. (1982). *Physical Activity and Growth.* London: Year Book Publishers.

Shields, E.(1984). Students rating of teachers + personal decision-making= CAUTION. *The Journal of Physical Education Recreation and Dance*, vol. 55, no. 1, pp. 35-37.

Siedentop, D. (1992). Thinking Differently about Secondary Physical Education. *Journal of Physical Education Recreation and Dance*, vol. 63, no. 7, pp. 69-72, & 77.

Silverman, D. (1993). *Interpreting Qualitative Data Methods for Analysing Talk, Text and Interaction.* London: Sage.

Simons, AD, McGowan, CR, Epstein, LH, Kupfer, DJ & Robertson, RJ (1985). Exercise as a treatment for depression: An update. *Clin. Psychol. Reveiw,* no. 5, pp. 553-568.

Simpson, G & Pruitt B (1989). The development of health promotion teams as related to wellness programs in Texas schools. *Health Education,* vol. 20, no. 1, pp.26-28.

Sleap, M. & Warburton, P. (1994). Physical Activity Levels of Pre-adolescent Children in England. *British Journal of Physical Education: Research Supplement,* no. 14, Summer, pp. 2-6.

Smith, T. & Cestaro N. (1992). Saving future generations- The role of Physical Education. *Journal of Physical Education Recreation and Dance,* vol. 63, no. 8, pp. 75-79.

Sobie, G. (1979). A systemic approach to promoting health in schools. *Canadian Health Education,* pp. 4-7.

Soman, V., Veikko, A., Deibert, D., Felig, P. and DeFronzo, R. (1979). Increased Insulin Sensitivity and Insulin Binding to Monocytes After Physical Training. *New England Journal of Medicine,* no. 310, no. 22, pp. 1200-4.

Sparkes, A. & Owen, G. (1994). Physical Education and Information Technology: Cross Curricular Alliances. *British Journal of Physical Education,* vol. 25, no. 2, pp. 23-28.

Sports Council and Health Education Authority. (1992). Activity and Health Research. *Allied Dunbar National Fitness Survey,* London: Author.

Sports Council for Wales (1993). *Children's sport participation 1991/92.* Cardiff: The Policy Planning Section: Sports Council for Wales.

SPSS (1992). *SPSS for windows base system user's guide release 5.0.* Chicago, IL: SPSS Inc.

Stamler, R., Stamler, J., Riedlinger, W., Algera, G. and Roberts, R. (1978). Weight and Blood Pressure. Findings in Hypertension Screening of 1 Million Americans. *Journal of the American Medical Association,* vol. 240, no. 15, pp. 1607-1610.

Stein, J. and Hirsch, J. (1972). Obesity and Pancreatic Function. In D. Steener & N. Frankel (Eds.), *Handbook of Physiology*: Section 1. Endocrinology, vol. 1. Washington, DC.: American Physiological Society.

Stone, E., Baranowski, T., Sallis, J. & Cutler, J. (1995). Review of behavioural research for cardiopulmonary health: Emphasis on Youth, Gender and Ethnicity. *Journal of School Health Education-Supplement,* vol. 26, no. 2, pp. S9-S17.

Stratton, G. (1995). Dearing or derailing health related exercise in the national curriculum? Tracking physical education's changing role in the promotion of public health. *The British Journal of Physical Education*, vol. 20, no. 1, pp. 21-25.

Strong, W (1988). Obesity, physical activity, and smoking. In Roche, AF (ed.). *Prevention of Adult Atherosclerosis During Childhood: Report of the Ninety-Fifth Ross Conference on Pediatric Research*, pp. 112-117. Columbus, Ohio: Ross Laboritories.

Strong, W. & Dennison, B. (1989). Pediatric Preventive Cardiology Atherosclerosis and Coronary Heart Disease. *Pediatrics in Review*, vol.,9 no. 10, pp. 303-314.

Taunton, J. & McCarger (1995). Managing ways to incorporate exercise into lifestyle. *The Physician and Sportsmedicine*, vol. 23, no. 3, pp. 41-52.

Terhune, J. (1986). Teaching Skills for Healthy Lifestyles. *Health Education*, vol. 17, no. 1, pp. 4-7.

TES - Times Educational Supplement (1994). A Minister Out of Step With Aerobics. *The Times Educational Supplement*, February 4, 1994, p. 16.

Thomas, J. (1985). Remembrance of things past and best forgotten. *Physical Education Review*, vol. 8, no. 1, pp. 3-6.

Thomas, Jerry R. & Nelson, Jack K. (1990). *Research Methods in Physical Activity (2nd ed.)* Human Kinetics Books: Champaign.

Thompson, M., Daugherty, R., and Carver, V. (1984). Alcohol Reduction in Schools: Toward a Lifestyle Risk-Reduction Approach. *Journal of School Health*, vol. 54, no. 2, pp. 79-83.

U.S. Department of Health, Education and Welfare. (1979). *Healthy People: Disease Prevention and Health Promotion in the U.S. A Report of the Surgeon.* (DHEW Publication No. PHS 79-55071) Washington, D.C.: U.S. Printing Office.

U.S. Department of Health and Human Services (1980). *Promoting Health, Preventing Disease: Objectives for the Nation.* A Report of the Surgeon General. Washington D.C.: U.S. Government Printing Office.

U.S. Department of Health and Human Services (1982). *The Health Consequences of Smoking: Cancer.* A Report of the Surgeon General. Washington, D.C.: US Government Printing Office.

U.S. Department of Health and Human Services. (1984). *The National Children and Youth Fitness Survey (NCYFS).*

U.S. Department of Health and Human Services- Office of the Assistant Secretary for Health. (1986). *The Presidents Council on Physical Fitness and Sports 1985: School Fitness Survey.* Research Project 282-84-0086. The University of Michigan.

U.S. Department of Health and Human Services. (1990). *Healthy People 2000: National Health Promotion and Disease Prevention Objectives.* (DHHS Pub. No. [PHS] 91-50213). Washington D.C.: U.S. Government Printing Office.

Veenker, C.H. & Torabi, M.R. (1984). A Three Component Alcohol Attitude Scale.*Journal of School Health*, vol. 54, no. 5 pp. 204-207.

Vickers J., (1992). While Rome Burns - Meeting the Challenge of the Reform Movement in Education. *Journal of Physical Education Recreation and Dance*, vol. 63, no. 7, pp. 80-87.

Walbran B., Nelson J. & Taylor J. (1981). Association of cerebral infarction and chronic alcoholism: An autopsy study. *Alcoholism*, vol. 5, no. 4, pp. 531-535.

Wallberg-Henriksson, H. (1992). Exercise and diabetes mellitus. *Exercise Sport Science Review*, vol. 20, pp. 339-368.

Wankel, L. & Sefton, J. (1994). Physical activity and other lifestyle behaviors. In Bouchard, Claude, Shepard, Roy J., & Stephens, Thomas (Eds.) (1994). *Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement.* Chapter 36, pp. 530-550. Champaign, Il: Human Kinetics Publishers, Inc.

Watkins, D. (1985). A model for lifetime activity. *Journal of Physical Education Recreation and Dance*, vol. 56, no. 7, pp. 51-54.

Wechsler, H., Rohman, M., Kotch, J., and Idelson, R. (1984). Alcohol and Other Drug Use and Automobile Safety: A Survey of Boston-Area Teen-agers. *Journal of School Health*, vol.54, no. 5, pp. 201-203.

Weinstein, D. & Weinstein, M.A. (1991). Georg Simmel: Sociology flaneur bricoleur. *Theory, Culture, & Society*, no. 8, pp. 151-168.

Weltman, A. (1983). Unfavorable Serum lipid Profiles in Extremely Overfat Women. *International Journal of Obesity*, vol. 7, no. 2, pp. 109-114.

Weltman, A. (1984). Exercise and Diet to Optimize Body Composition, chapter 1. In *Behavioral Health: A Handbook of Health Enhancement and Disease Prevention.* New York: John Wiley and Sons.

Weltman, A., Matter, S. and Stamford, B. (1980). Caloric Restriction and/or Mild Exercise: Effects on Serum Lipids and Body Composition. *American Journal of Clinical Nutrition*, vol. 33, no. 5, pp. 1002-1009.

Wentzell S (1992). *Motivating high school students: Realistic and Practical approaches.* AAHPERD National Convention, Indianapolis, IN, USA, April 8, 1992.

West, K. (1978). *Epidemiology of Diabetes and Its Vascular Lesions.* New York: Elsevier.

WHO (1986). Prepared by the Health Education Unit Regional Office for Health Education, Copenhagen. Life-Styles and Health. *Soc Sci Med,* vol. 22, pp. 117-124.

Wilcox, R. (1987). DROPOUTS- The failing of high school physical education. *Journal of Physical Education Recreation and Dance,* vol. 58, no. 6, pp. 21-25.

Wild, E. (1942). *The Foundations of Modern Education, New and Enlarged edition.* (p. 229). New York, USA: Rinehart & Co.

Wilgoose, C. (1961). *Evaluation in Health Education and Physical Education.* New York: McGraw Hill.

Wilkinson, P., Parkin, J., Pearlson, G., Strong, H. and Sykes, P. (1977). Energy Intake and Physical Activity in Obese Children. *British Medical Journal,* vol. 1, p. 576.

Wilmore, J. (1982). *Training For Sports Activity (2nd ed.).* Boston: Allyn & Bacon.

Wilmore, J. and McNamara, J. (1974). Prevalence of Coronary Heart Disease Risk Factors in Boys, 8 to 12 Years of Age. *Journal of Pediatrics,* vol. 84, pp. 527-533.

Witte, R.S. (1989). *Statistics 3rd ed.,* Orlando, Florida, USA: Saunders College Publishing.

Woodhouse, J. (1988). Health-related fitness- addressing the issues. *British Journal of Physical Education,* vol. 19, no. 4-5, pp. 199-200.

Wolf, C., Cohen, K. & Rosenfeld, J. (1985). School-based interventions for obesity: Current approaches and future prospects. *Psychology in the Schools,* vol. 22, no. 2, pp. 187- 200.

Woynarowska, B., Mukherjee, D., Roche, A., and Siervogel, R. (1985). Blood pressure changes during adolescence and subsequent adult blood pressure levels. *Hypertension,* vol.7, no. 5, pp. 695-701.

Wulf, K. and Schave, B. (1984). *Curriculum Design A Handbook For Educators.* California, USA: Scott, Foresman and Company.

Appendices

Study of Lifestyle and Physical Activity Patterns of British and Kuwaiti 15 - 16 Year Old Boys

Submitted By Taha Abdul-Rahman Al-Jaser

for the degree of Ph.D.

University of Bath

1995

Appendix (A)

February 13, 1992

Dear Parents,

I am a research student at the University of Bath School of Education. I require your permission for your child to participate in a study concerning physical education and health.

It is very well documented that appropriate physical activity over a sustained period of time can have a profound effect on adult health. A mounting body of data confirms that this is also the case in young people and it is likely that physical activity in this group will lead to improved health as adults. In spite of the new understanding of the relationship between health and physical activity, levels of physical activity in young people have declined significantly in recent years. There is therefore a need to gain further understanding of young people's lifestyle in order to help them to achieve their fullest potential.

The study is divided into two parts. The first part is a questionnaire asking about physical education class as well as personal health habits such as physical activity, diet, and safety. The second part is comprised of four physical tests; sit-ups, one mile walk/run, sit and reach flexibility test, and skinfold measurements. All work will be done with the cooperation of the regular physical education teacher and will take no more than two physical education lesson periods.

I have attached a more detailed paper for your information. Please read and sign the permission slip and return it to school at your earliest convenience.

Thank-You for Your Assistance,

Sincerely,

Taha A. Al-Jaser

Appendix (A)

Child Consent Form
(15-16 year olds)

TITLE : Study of Lifestyle and Physical Activity Patterns of British and Kuwaiti 15 Year Old Boys

INVESTIGATOR: Taha A. Al-Jaser
Research Student - University of Bath
School of Education
Calverton Down, Bath BA2 7AY
(0225) 826-826

****

Mr. Al-Jaser and my parents have explained to me that I am going to participate in a research study which will measure my level of fitness. They have told me that many adults can become ill because of how they acted when they were young. They want me to learn more about my own health fitness so I can possibly have a healthier life as an adult.

The first part of this study will be a questionnaire with questions based on physical education class and on a range of health habits such as physical activity, sleep, and nutrition.

In the second part of the study my height, weight and, age will be recorded. Mr. Al-Jaser will measure my percentage of body fat by using a small clip called a skinfold caliper. They said there won't be any pain or discomfort involved in this procedure. I will also be asked to walk or run one mile (1.6 Km), do as many sit-ups as possible in a one minute and, do a stretch test where I'll sit and reach for my toes. If I have any questions about any procedure I will ask my parents or Mr. Al-Jaser.

_____ _____

Investigator Child

_____ _____

Date Parent

Appendix (A)

Consent to Act As A Subject In An Experimental Study

TITLE: Study of Lifestyle and Physical Activity Patterns of British and Kuwaiti 15 Year Old Boys.

INVESTIGATOR: Taha A. Al-Jaser
Research student - University of Bath
School of Education
Calvernton Down, Bath BA2 7AY
(0225) 826-826

****

SOURCE OF SUPPORT: Public Authority of Applied Education and Training - Kuwait.

DESCRIPTION: I am asking a group of teenagers ranging in age from 15-16, selected randomly from British public schools, to participate in a research project aimed at determining the health-related fitness status of the average British child.

Britain and its' people have undergone many changes in the past 40-50 years. With all the benefits of modernization come some drawbacks. Previously there were jobs that demanded physical labor, but now there are jobs that demand more mental, sedentary, labor. We've stopped walking and started driving. Our diets are laden with fats and food additives from the flow of processed foods into our markets.

There is a low amount of physical activity compared to a high caloric intake. It has been established in the United States that their children are less fit than they should be. Lack of health fitness as a child seems to lead to lack of health fitness as an adult. Also, it has been stipulated, although not proven conclusively, that lack of physical activity is a risk factor related to cardiovascular diseases. According to Bud Getchell, author of Physical Fitness: A Way of

Life , " physical fitness is the capability of the heart, blood vessels, and muscles to function at optimal efficiency." The opposite can then be accepted; the lack of physical activity will render the heart, blood vessels , and muscles less able to function optimally and thus more susceptible to disease.

If there is a problem with the health fitness of British children it is important to detect it early and try to correct the situation causing it. The health fitness of British students is simply not known at this time and it is for this reason I believe it is important to have the students participate in this project.

The first part of this study will be a questionnaire with questions based on physical education class as well as on a range of health habits such as physical activity, sleep, and nutrition. In the second part of the study the students will be asked to perform 4 health related fitness tasks. These tasks will be part of the usual physical education class and no special preparations are necessary.

Task 1: A one mile walk or run. The researcher will record the time necessary for each student to complete the task. This should give an indication of cardiovascular fitness.

Task 2: Sit and reach. The students will sit on the floor with their legs extended. The heel of the foot being 23cm, beyond the heel numbers will increase in centimeters, before the heel the numbers will decrease. This test measures flexibility in the low back and posterior thigh.

Task 3: Flexed knee sit-up. The students will work in pairs recording the number of completed sit-ups in a one minute period. This will indicate abdominal strength and muscular endurance.

Task 4: Students will stand passively while the tester records a subscapular and triceps skinfold measurement using a skinfold caliper. This will be used to determine percentage of body fat.

Task 5: Age, height and, weight will be recorded.

RISKS AND BENEFITS: The risks involved with the health-related tasks should be minimal. The children will be told to do only as much as they can complete successfully and

without pain.

The benefits of such tests can be far reaching to the participant and perhaps to the education program in the British public schools. This data is not available to administrators and curriculum developers at this time. It could be beneficial in raising the awareness of school personnel to the concept of health fitness in children and the importance of physical activity in their lives to offset an overindulgent lifestyle. The children and teachers may learn of areas of weakness and they can work together to improve them. Perhaps a program with more emphasis on cardiovascular strength may be indicated or, the students may simply need more hours scheduled for physical activities which are designed to increase strength and flexibility.

CONFIDENTIALITY: Please be assured that any information about your child obtained through this research project will be kept strictly confidential. Your consent is therefore given to the publication of study results so long as the information is anonymous and/or disguised so that identification cannot be made.

RIGHT TO WITHDRAW: You should also understand that you are free to refuse to allow your child:_____ to participate in this study or to withdraw at any time. You may scratch any item you think is not appropriate for your child to perform or you simply do not wish your child to take part in.

VOLUNTARY CONSENT: I certify that I have read the preceding or it has been read to me and that I understand its contents. Any questions I have pertaining to its contents have been answered by Taha A. Al-Jaser; (0225) 338-367 Bath.

My signature below means that I freely agreed to the participation of my child _____ in this research study.

_____ _____

Date Parent or Guardian

Appendix (A)

كلية التربية الأساسية
قسم التربية البدنية و الرياضة

نموذج الطالب

" استمارة موافقة على الأشتراك كأحد أفراد العينة في أحدى الدراسات التجريبية "

عنوان الدراسة

" دراسة مقارنة لنمط الحياة والميول لمزاولة الأنشطة الرياضية بين طلبة بريطانيا والكويت لسن 15 – 16 سنة "

الباحث / طة عبد الرحمن الجاسم
كلية التربية الأساسية
قسم التربية البدنية والرياضة
العديلية - الكويت

قد قام السيد / طة الجاسم بشرح ما سوف أقوم به للمشاركة في البحث و الذي يتمثل في التالي :

1. الأجابة على الأستبيان المرفق .
2. اجراء بعض الأختبارات لقياس اللياقة الصحية . وتتكون هذة الأختبارات من قياس للطول , الوزن , المشي او الجري لمسافة ميل او 1600 متر , الجلوس من وضع الرقود لمدة دقيقة , الجلوس الطويل و محاولة لمس أصابع القدمين , و قياس نسبة السمنة .

و قدقام السيد / طة الجاسم بأجابة على جميع تساؤلاتي و لما لهذة الأختبارات من فوائد تعود على شخصيا و على المجتمع ككل اذا ما اخذت بعين الأعتبار من قبل المسئولين فأنني أقر

أنا الطالب / _____

أسم المدرسة / _____

في الصف / _____

أنني قد قرأت الأستمارة و أن كل تساؤلاتي قد اجيبت و ان توقيعي في اسفل هذة الأستمارة دليل على موافقتي بالأشتراك .

أسم الطالب / _____

التوقيع / _____

التاريخ / _____

Appendix (A)

كلية التربية الأساسية
قسم التربية البدنية و الرياضة

" استمارة موافقة على الأشتراك كأحد أفراد العينة فى أحدى الدراسات التجريبية "

عنوان الدراسة

" دراسة مقارنة لنمط الحياة والميول لمزاولة الأنشطة الرياضية بين طلبة بريطانيا والكويت لسن 15 – 16 سنة "

الباحث / طة عبد الرحمن الجاسر
كلية التربية الأساسية
قسم التربية البدنية والرياضة
الفديلية - الكويت

السيد الفاضل ولى أمر الطالب , بعد السلام عليكم ورحمة الله وبركاتة .
أنا طالب الدكتورة من جامعة بات فى بريطانيا , أطلب السماح لأبنك بالأشتراك فى الدراسة والتى تتعلق بمفهوم الطالب للعادات الصحية وكذلك مستوى اللياقة الصحية لدى الطالب . حيث ان مثل هذة المعلومات جديدة نوعاماعلى الكويت فان مشاركت ابنك فى هذة الدراسة لة اكبر التقدير والدراسة تتكون عبارة عن استبان يقوم الطالب بالأجابة على الأسئلة خلال حصة التربية البدنية والقيام ببعض الأختبارات لمعرفة مستوى اللياقة الصحية لدى الطالب وهذة الأختبارات عبارة عن المشى او الجرى لمسافة ميل او 1600 متر , الجلوس الطويل ومحاولة لمس اصابع القدمين , الجلوس من وضع الرقود , وقياس نسبة السمنة لدى الطالب وان كل هذة الأختبارات ستتم تحت اشراف مدرس مادة التربية البدنية .

فاذا كانت هناك أى تسؤالات او استفسارات ارجوا الأتصال بالهاتف رقم 471-2258 / طة الجاسر .

ولكم منى جزيل الشكر والأمتنان .

الباحث / طة الجاسر

أقر أنا ولى أمر الطالب / _____
على موافقة بشتراك ابنى فى هذة الدراسة .

أسم / _____

التوقيع / _____

التاريخ / _____

Appendix (B)

بسم الله الرحمن الرحيم

THE PUBLIC AUTHORITY
FOR APPLIED EDUCATION & TRAINING.

الهيئة العامة
للتعليم التطبيقي والتدريب

المرجع: ص/ت/ع/١٥٩٤
التاريخ: ٤/٩/٩٥
الموافق: / /

السيد / وكيل وزارة التربيه المحترم
السلام عليكم ورحمة الله وبركاته وبعد ،

الموضوع : تسهيل مهمة الاستاذ/ طه عبدالرحمن الجاسر
لتوزيع الاستبيانات علي طلبة وطالبات بعض المدارس
الثانويه

يرجي التكرم بتسهيل مهمة الاستاذ / طه عبدالرحمن الجاسر - معيد بعثة الدكتوراه بقسم التربية البدنيه والرياضه بكلية التربيه الاساسيه للقيام بتوزيع بعض الاستبيانات علي طلبة وطالبات عشر مدارس ثانويه بحيث تكون (٥ بنين ، ٥ بنات) بالمناطق التعليميه الخمس بالوزاره ، وذلك بواقع مدرستين لكل منطقه .

مع العلم بأنه سوف يتم إجراء بعض الاختبارات لقياس اللياقه الصحيه بالنسبه للطلبه ، أما الطالبات فسوف يقومون بالاجابه علي الاستبيانات فقط .

شاكرين لكم حسن تعاونكم .

وتفضلوا بقبول فائق الاحترام ،،،

نائب المدير العام
للتعليم التطبيقي والبحوث

د. احمد محمد بوزيد
نائب المدير العام
للتعليم التطبيقي والبحوث

Sharq, Dasman Complex - P.O.Box (23167), Safat, Kuwait, (13092) Telex (22269) TKT.Tel.: (241)050) 10 Lines - Fax 2459153

الشرق - مجمع دسمان - ص . ب 23167 الصفاة - الكويت 92 ٢١ تلفون (٢٤١٣٠٥٠) عشر خطوط - فاكس ٢٤٥٩١٥٣

Appendix (B)

THE PUBLIC AUTHORITY
FOR APPLIED EDUCATION & TRAINING.

الهيئة العامة
للتعليم التطبيقي والتدريب

المرجع :
التاريخ: / /
الموافق: ٤ / ٢ / ١٩٩٢م

كليـــــة التربيـــــة الاساسيـــة

السيد الدكتـــور / نائب المدير العام للتعليم التطبيقى والبحوث ... المحترم

الســـلام عليكـم ورحمـه اللـــه وبركاتـه ـ وبعـــد ،،،

الموضـوع : تطبيـق استبيان على طلبـه وطالبات مدارس وزارة التربية الثانوية .

برجـــى التكرم بعمـــل اللازم نحـــو مخاطبـــة وزارة التربيـة لتسهيـل مهمـــــة الاستاذ / طـــه عبـد الرحمـن الجاســـر ـ معيـد بعثـــه الدكتوراة ـ بقســـــم التربيـة البدنيـة والرياضـة بالكليـة .

وذلك لقامة بتطبيق بحث على عدد (١٠) مدارس من مدارس الثانوية العامـة بحيـــث تكون (٥ بنين ، ٥ بنات) بالمناطـــق التعليميـة الخمـس بالوزارة ، وذلك بواقـــــع مدرستيـــن لكـــل منطقـــة .

مـع الاحاطـــة علمـــا بأنه ســـوف يتم أجـراء بعـض الاختبارات لقيـاس اللياقـــة الصحيـة بالنسبـة للطلبـة ، أما البنـــات فســـوف يقـومون بالاجابـة على الاستبيـــان فقـــط .

شاكرين لكم حســـن تعاونكم معنـــا ،،،

مـــع خالـص التحيـــه ،،،

عميـــــد الكليـــة

د. عبد المحســن عبد اللـه الخرافـى

١٩٩٢/٢/٤

ـ نسخـة للملـــف
ـ نسخـة للملف العام
ـ قسم التربية البدنية والرياضة

Sharq, Dasman Complex - P.O.Box (23167), Safat, Kuwait, (13092) Telex (22269) TKT.Tel.: (2413050) 10 Lines - Fax 2459153

الشرق ـ مجمع دسمان ـ ص . ب 23167 الصفاة ـ الكويت 13092 تلكس ٢٢٢٦٩ تلفون (٢٤١٣٠٥٠) عشر خطوط ـ فاكس : ٢٤٥٩١٥٣

Appendix (C)

Study of lifestyle and physical activity patterns of British and Kuwaiti 15 - 16 year old boys.

School : _____

Year : _____

Name : _____

Date of Birth : _____

Date : _____

FOR OFFICE USE ONLY
PLEASE DO NOT WRITE
IN THIS COLUMN.

1. Do you have Physical Education (PE) lessons at your school ?

YES	NO	
☐	☐	1 2

2. If yes, are you taking PE this year ?

YES	NO	
☐	☐	1 2

3. How many times a week do you have PE ?

I don't take PE ☐	**1 day a week** ☐	0 1
2 days a week ☐	**3 days a week** ☐	2 3
4 days a week ☐	**5 days a week** ☐	4 5
Other (specify) : _____		9

4. How long dose your PE lesson last ? _____ **Minutes** 1 2 3 4 5 6 7 8

Appendix (C)

FOR OFFICE USE ONLY
PLEASE DO NOT WRITE
IN THIS COLUMN.

5. About how much time are you involved in physical activity in PE class ? (Excluding time for changing , register and showering)

_____ **Minutes** 1 2 3 4 5

6. If you take part in PE at school do you have a place to :

a. CHANGE CLOTHES	b. TAKE SHOWERS	
YES ☐	YES ☐	a. 1 b. 1
NO ☐	NO ☐	b. 2 b. 2

7. In the past year did you take part in any sport in school, other than PE lessons ?

YES	NO	
☐	☐	1 2

Other (specify) : _____ 9

8. In the past year did you take part in any sport outside school ?

YES	NO	
☐	☐	1 2

* **Was it ? TEAM** ☐ **INDIVIDUAL** ☐ **BOTH** ☐ 1 2 3

9. If you did not take part in any physical activity at school, or at any organization outside of school in the past year, please tick the reasons why :

- ☐ **I am not very good at any particular sport.** 1
- ☐ **I don't like to compete with others.** 2
- ☐ **My friends don't play any sport.** 3
- ☐ **I'm always picked last, then I sit out most of the game.** 4
- ☐ **I don't like the activity leader.** 5
- ☐ **My parents don't allow me to join sport teams.** 6
- ☐ **I don't like to play any sport.** 7

Other (SPECIFY): _____ 9

Appendix (C)

FOR OFFICE USE ONLY
PLEASE DO NOT WRITE
N THIS COLUMN.

10. In each of the four seasons how often do you typically get physical activity that makes you sweat or breathe hard for 20 minutes or more ? (Brisk walks, jogging, football)

SPRING : _____	**DAYS PER WEEK**	1 2 3 4 5 6 7
SUMMER : _____	**DAYS PER WEEK**	1 2 3 4 5 6 7
AUTUMN : _____	**DAYS PER WEEK**	1 2 3 4 5 6 7
WINTER : _____	**DAYS PER WEEK**	1 2 3 4 5 6 7

11. List the physical activities that you most enjoy :

NONE ☐ (PLEASE TICK)	0
1. _____	1 - 42
2. _____	1 - 42
3. _____	1 - 42
4. _____	1 - 42
5. _____	1 - 42

12. Do you have homework everyday ?

YES	**NO**	
☐	☐	1 2

Other (specify) : _____ 9

13. How much time do you spend each day studying ?

NONE ☐ TIME : _____ 0 - 9

14. How much television do you watch each day ?

NONE ☐ TIME : _____ 0 - 9

15. When watching TV did you watch videos or TV programs ?

VIDEO ☐ TV PROGRAMS ☐ NONE ☐ 1 2 3

16. How much time do you spend playing computer or video games each day ?

NONE ☐ TIME : _____ 0 - 9

Appendix (C)

FOR OFFICE USE ONLY
PLEASE DO NOT WRITE
N THIS COLUMN.

17. What time do you go to bed every night ?
TIME :_____ 1 - 8

18. What time do you get up every morning ?
TIME : _____ 1 - 7

19. Do you have breakfast every morning ?
YES **NO**
☐ ☐ 1 2

Other (specify) : _____ 9

20. Have you ever tried to lose weight ?
YES **NO**
☐ ☐ 1 2

Other (specify) : _____ 9

21. If you tried to lose weight was it by :
DIET ONLY ☐ **EXERCISE ONLY** ☐ 1 2
BOTH ☐ **OTHER (SPECIFY) :**_____ 3 9

22. Have you ever tried to gain weight ?
YES **NO**
☐ ☐ 1 2

Other (specify) : _____ 9

23. If you tried to gain weight was it by :
DIET ONLY ☐ **EXERCISE ONLY** ☐ 1 2
BOTH ☐ **OTHER (SPECIFY) :** _____ 3 9

Appendix (C)

FOR OFFICE USE ONLY
PLEASE DO NOT WRITE
N THIS COLUMN.

24. Do you smoke cigarettes ?

YES **NO**

☐ ☐ 1 2

Other (specify) : _____ 9

25. If you have answered yes to question number 24, how many cigarettes you smoke a day ?

NONE ☐ **NUMBER OF CIGARETTES _____** 0 Number

26. Do you ever drink alcoholic drinks ?

YES **NO**

☐ ☐ 1 2

* If YES how often ?

ONCE A MONTH ☐ **ONCE A FORTNIGHT** ☐ 1 2

ONCE A WEEK ☐ **MORE THAN ONCE A WEEK** ☐ 3 4

OTHER (SPECIFY) _____ 9

27. Do the friends you most usually associate with drink alcoholic drinks ?

YES **NO**

☐ ☐ 1 2

28. Do you own a bicycle ?

YES **NO**

☐ ☐ 1 2

29. Did you use a bicycle in the past two weeks ?

YES **NO** **N/A I don't own a bicycle** 1 2 0

☐ ☐ ☐

Appendix (C)

FOR OFFICE USE ONLY
PLEASE DO NOT WRITE
N THIS COLUMN.

30. When you used the bicycle, for how long do you usually use it ?

TIME : _____ 1 - 10

N/A I don't own a bicycle ☐ 0

31. When you ride your bike do you regularly use safety equipment such as helmet ?

YES ☐ **NO** ☐ **N/A I don't own a bicycle** ☐ 1 2 0

32. How do you come to school every day ?

CAR ☐ **BUS** ☐ **BIKE** ☐ **WALKING** ☐ 1 2 3 4

33. About how far do you live from school ?

_____ **(MILE)** Number

34. When you ride in a car do you regularly use seat belts ?

YES ☐ **NO** ☐ 1 2

Appendix (C)

*** * * TICK THAT STATEMENT WHICH BEST CORRESPONDS TO YOUR OPINION ON THE QUESTIONS. * * ***

Strongly Agree	**(SA)**
Agree	**(A)**
Neutral	**(N)**
Disagree	**(D)**
Strongly Disagree	**(SD)**

	SA	A	N	D	SD	FOR OFFICE USE ONLY PLEASE DO NOT WRITE N THIS COLUMN.
35. I look forward to PE lessons	☐	☐	☐	☐	☐	5 4 **3** **2** 1
36. I think PE lessons are a welcome in the day.	☐	☐	☐	☐	☐	5 4 **3** **2** 1
37. I dislike PE lessons.	☐	☐	☐	☐	☐	1 2 3 4 5
38. I see PE lessons as a waste of time.	☐	☐	☐	☐	☐	1 2 3 4 5
39. The activities in PE lessons are too strenuous for me.	☐	☐	☐	☐	☐	1 2 3 4 5
40. I generally feel inadequate in PE.	☐	☐	☐	☐	☐	1 2 3 4 5
41. I get benefit from PE and would like more PE lessons	☐	☐	☐	☐	☐	5 4 **3** **2** 1
42. PE has a positive effect on my health.	☐	☐	☐	☐	☐	5 4 **3** **2** 1
43. PE consists of games and doesn't involve any studying.	☐	☐	☐	☐	☐	1 2 3 4 5
44. PE has no effect on my personal health	☐	☐	☐	☐	☐	1 2 3 4 5
45. I wish I didn't have to take PE.	☐	☐	☐	☐	☐	1 2 3 4 5
46. PE has no influence on my future.	☐	☐	☐	☐	☐	1 2 3 4 5

Appendix (C)

Code for some of the questions

4. Less than 30 min. = 1 | 31 - 45 min. = 2 | 46 - 60 min. = 3
61 - 75 min. = 4 | 76 - 90 min. = 5 | 91 - 105 min. = 6
106 - 120 min. = 7 | More than 120 min. = 8

5. Less than 15 min. = 1 | 16 - 30 min. = 2 | 31 - 45 min. = 3
46 - 60 min. = 4 | More than 61 min. = 5

11. List of the physical activities:

None = 0	Soccer = 1	Basketball = 2
Handball = 3	Volleyball = 4	Gymnastic = 5
Hockey = 6	Rope jumping = 7	Softball = 8
Swimming = 9	Tag games = 10	Tennis = 11
Table tennis = 12	Walking = 13	Running = 14
Cycling = 15	Aerobic Ex. = 16	Fishing = 17
Hunting = 18	Track & Field = 19	Skating = 20
Wrestling = 21	Boxing = 22	Judo = 23
Kartee = 24	Horseback ridding = 25	Weight training = 26
Squash = 27	Badminton = 28	Fincing = 29
Rowing = 30	Water sport = 31	Rounders = 32
Rugby = 33	Cricket = 34	Snooker = 35
Darts = 36	Golf = 37	American football = 38
Mountaineering = 39	Salling = 40	Netball = 41
Bowling = 42		

13. None = 0 | Less than 15 min. = 1 | 16 - 30 min. = 2
31 - 45 min = 3 | 46 - 60 min = 4 | 61 - 75 min. = 5
76 - 90 min. = 6 | 91 - 105 min. = 7 | 106 - 120 min. = 8
More than 120 min. = 9

14. None = 0 | Less than 15 min. = 1 | 16 - 30 min. = 2
31 - 45 min = 3 | 46 - 60 min = 4 | 61 - 75 min. = 5
76 - 90 min. = 6 | 91 - 105 min. = 7 | 106 - 120 min. = 8
More than 120 min. = 9

16. None = 0 | Less than 15 min. = 1 | 16 - 30 min. = 2
31 - 45 min = 3 | 46 - 60 min = 4 | 61 - 75 min. = 5
76 - 90 min. = 6 | 91 - 105 min. = 7 | 106 - 120 min. = 8
More than 120 min. = 9

Appendix (C)

Code for some of the questions

17. Before 9: 00 PM = 1 | At 9 : 00 PM = 2 | 9: 30 PM = 3
    10 : 00 PM = 4 | 10: 30 PM = 5 | 11: 00 PM = 6
    11 : 30 PM = 7 | 12: 00 AM or Later = 8

18. Before 6: 00 AM = 1 | At 6: 00 AM = 2 | 6: 30 AM = 3
    7: 00 AM = 4 | 7: 30 AM = 5 | 8: 00 AM = 6
    8:30 AM or Later = 7

30. Less than 15 min. = 1 | 16 - 30 min. = 2 | 31 - 45 min. = 3
    46 - 60 min. = 4 | 61 - 75 min. = 5 | 76 - 90 min. = 6
    91 - 105 min. = 7 | 106 - 120 min. = 8 | 121 - 135 min. = 9
    More than 136 min. = 10

Appendix (C)

دراسة مقارنة لنمط الحياة و الميول لمزاولة الأنشطة الرياضية بين طلبة بريطانيا و الكويت لسن 15 – 16 سنة.

أسم المدرسة : _____

أسم الطالب : _____

الصف : _____

تاريخ الميلاد: _____

تاريخ اليوم : _____

---

1. هل هناك خصصا للتربية الرياضية فى مدرستك؟

نعم	لا
☐	☐

2. أذا كانت إجابتك على السؤال الأول بالأيجاب هل تتلقى حصصا فى مادة التربية الرياضية خلال هذا العام؟

نعم	لا
☐	☐

3. كم حصة فى الأسبوع تتلقى مادة التربية الرياضية؟

* لست مسجلا فى فصل التربية الرياضية. ☐
* حصة واحدة فى الأسبوع. ☐
* حصتين فى الأسبوع. ☐
* ثلاث حصص فى الأسبوع. ☐
* أربع حصص فى الأسبوع. ☐
* خمس حصص فى الأسبوع. ☐
* معدلات أخرى (نرجوا التوضيح): _____

Appendix (C)

4. كم تستغرق حصة التربية الرياضية؟ _____ **دقيقة.**

5. كم من الوقت تقضية فى مزاولة الأنشطة الرياضية خلال حصة التربية الرياضية ؟
(بغض النظر عن الوقت الذى يستغل للحضور الى الملعب ، تغير الملابس ، أخذ الغياب ،
و الأستحمام بعد النشاط . . . الخ . . .) _____ **دقيقة.**

6. هل تتوفر فى المدرسة الوقت و المكان المناسب و اللازم ل ؟

أ. تغير الملابس. **ب. الإستحمام.**

نعم	**لا**	**نعم**	**لا**
☐	☐	☐	☐

7. خلال العام الدراسى الماضى هل شاركت فى أى من الأنشطة الرياضية فى المدرسة ، ولكن خارج حصة التربية الرياضية ؟

نعم	**لا**
☐	☐

*** إجابة اخرى (نرجوا التوضيح)** _____ .

8. خلال العام الدراسى الماضى هل شاركت فى أى من الأنشطة الرياضية خارج المدرسة ؟

نعم	**لا**
☐	☐

(أ) أذا كانت إجابتك بنعم فماهى طبيعة هذة الأنشطة ؟

ألعاب فردية فقط	**ألعاب جماعية فقط**	**ألعاب فردية وجماعية**
☐	☐	☐

Appendix (C)

9. أذا لم تشارك فى آى من الأنشطة الرياضية داخل و خارج المدرسة خلال العام الدراسى الماضى بين السبب او الأسباب التى منعتك من الأشتراك:

- ☐ **لأننى لا أجيد آى لعبة من الألعاب الرياضية.**
- ☐ **لا أحبذ منافسة الآخرين.**
- ☐ **لأن أصدقائى لا يحبذون مزاولة الأنشطة الرياضية.**
- ☐ **خلال الألعاب الرياضية غالبا مايتم إختيارى أخر التلاميذ وغالبا ما أكون على الخط طوال فترة اللعب .**
- ☐ **لا أرتاح من قائد الفريق او قائد النشاط الرياضى.**
- ☐ **ولى أمرى لا يوافق على مشاركتى فى آى نوع من الأنشطة الرياضية.**
- ☐ **لا احب ممارسة آى نوع من أنواع الأنشطة الرياضة.**
- ☐ **أسباب أخرى :** _____

10. خلال فصول السنة الأربعة كم يوما بالأسبوع تمارس فية الأنشطة الرياضية و التى من شئنها زيادة دقات القلب و زيادة فى سرعة التنفس وتسبب زيادة أفرازات العرق لمدة لا تقل عن 20 دقيقة او أكثر مثل (المشى السريع ، الجرى ، ركوب الدراجات الهوائية ، سباحة ، لعب كرة القدم ، وغيرها).

عدد الأيام فى فصل الربيع : _____ يوما فى الأسبوع

عدد الأيام فى فصل الصيف : _____ يوما فى الأسبوع

عدد الأيام فى فصل الخريف : _____ يوما فى الأسبوع

عدد الأيام فى فصل الشتاء : _____ يوما فى الأسبوع

11. أذكر خمسا من الأنشطة الرياضية التى تتمتع بممارستها:

☐ **لا أمارس آية نشاط رياضى.**

1. _____ .
2. _____ .
3. _____ .
4. _____ .
5. _____ .

Appendix (C)

12. هـل تـقـوم بدراسـة وعمل الواجب المنزلى يوميا ؟

نـعـم	لا
☐	☐

*** إجـابـة اخرى (نرجوا التوضيح) _____ .**

13. كم من الوقت تـقـضية فى الدراسـة وعمل الواجب المنزلى يوميا ؟

☐ **لم أقـضى اية وقت فى الدراسـة.**

*** الوقت الذى أقضية فى الدراسـة يوميا : _____ سـاعـة / دقيقة.**

14. كم من الوقت تـقـضية بمشـاهدة التلفاز (التلفزيون) يوميا ؟

☐ **لم أقـضى اية وقت بمشـاهدة التلفاز (التلفزيون).**

*** الوقت الذى أقضية بمشـاهدة التلفاز (التلفزيون). يوميا : _____ سـاعـة / دقيقة.**

15. عند مشاهدتك التلفاز هل تكون المادة مسجلة على الفيديو او بث تلفزيونى ؟

☐ **لم أقـضى اية وقت بمشـاهدة التلفاز (التلفزيون).**

*** فيديو ☐ * بث تلفزيونى ☐**

16. كم من الوقت تـقـضية فى لعب الحاسب الألى (الكمبيوتر) يوميا ؟

☐ **لم أقـضى اية وقت فى لعب الحاسب الألى (الكمبيوتر).**

*** الوقت الذى أقضية فى لعب الحاسب الألى (الكمبيوتر) يوميا :_____ سـاعـة / دقيقة.**

17. متى تـذهب الى النوم يوميا ؟ *** السـاعـة _____**

18. متى تـستيقظ من النوم يوميا ؟ *** السـاعة _____**

Appendix (C)

19. هل تتناول طعام الأفطار يوميا ؟

نعم ☐ لا ☐

* إجابة اخرى (نرجوا التوضيح) _____ .

20. هل حاولت مرة قط بتخفيض وزنك لأى سبب من الأسباب ؟

نعم ☐ لا ☐

* إجابة اخرى (نرجوا التوضيح) _____ .

21. أذا حاولت مرة أن تخفض وزنك ، هل كان بواسطة :

☐ رجيم او نظام غذائى خاص فقط. ☐ مزاولة الأنشطة الرياضية فقط.

☐ الأنشطة الرياضية والرجيم معا.

* وسائل أخرى (نرجوا التوضيح) _____ .

22. هل حاولت مرة قط بأن تزيد وزنك لأى سبب من الأسباب ؟

نعم ☐ لا ☐

* إجابة اخرى (نرجوا التوضيح) _____ .

23. أذا حاولت مرة أن تزيد وزنك ، هل كان بواسطة :

☐ رجيم او نظام غذائى خاص فقط. ☐ مزاولة الأنشطة الرياضية فقط.

☐ الأنشطة الرياضية والرجيم معا.

* وسائل أخرى (نرجوا التوضيح) _____ .

Appendix (C)

24. هـل تـدخـن ؟

نـعـم	لا
☐	☐

*** إجـابـة اخرى (نرجوا التوضيح)** _____ .

25. أذا كانت إجابتك بالأيجاب على السؤال السـابـق كم سـيجـارة تـقـوم بتدخينها يوميا ؟

☐ **لا أدخـن** *** عـدد السـجائر :** _____ **سيجارة.**

26. هـل سـبق وأن تناولت اى من المسـكرات (الكحول او اى من العقاقير المخدرة) ؟

نـعـم	لا
☐	☐

*** إجـابـة اخرى (نرجوا التوضيح)** _____ .

(أ) اذا كانت الأجابة بالأيجاب فما هو معدل تناولك لـهذة العقاقير؟

☐ **مـرة بالأسـبوع.** ☐ **مـرة كل أسـبوعين.**

☐ **أكثر من مـرة بالأسـبوع.** ☐ **مـرة بالشـهر.**

*** إجـابـة اخرى (نرجوا التوضيح)** _____ .

27. هـل يوجد من أصدقائك او أحد معارفك من يتناول اى من المسـكرات او العقاقير ؟

نـعـم	لا
☐	☐

28. هـل تـمتلك دراجة هوائية ؟

نـعـم	لا
☐	☐

Appendix (C)

29. هـل إسـتخدمت الدراجـة الهوائية خلال الأسـبوعين الماضـيـيـن ؟

نـعـم	لا	لا ينطبق
☐	☐	☐

30. كم من الوقت تقضية عند إستخدامك للعجلة الهوائية ؟

* **الوقـت بدقيقة او السـاعة :** _____ **د/ س.** ☐ **لا ينطبق**

31. عند إستخدامك للدراجة الهوائية هل ترتدى اى من معدات الوقاية مثل (خوذة للرأس وغيرها) ؟

نـعـم	لا	لا ينطبق
☐	☐	☐

32. مـاهى وسـيلة إنـتـقـالك للمدرسـة يوميا ؟

☐ **السـيارة.** ☐ **البـاص.**

☐ **العجلة الهوائية.** ☐ **المشـى.**

* **وسـيلة أخـرى (نرجوا التوضيح)** _____ .

33. مـاهى المسـافـة من منزلك الى المدرسـة (بالكيلومتر التقريبى) ؟

المسـافـة : _____ **كيلومترا تقريبا.**

34. عند ركوبك السـيارة هل تسـتخدم حزام الأمان ؟

نـعـم	لا
☐	☐

Appendix (C)

*****بين ماهو شعورك إتجاه العبارات التالية ، وذلك بوضع (x) أمام العبارة إذا كنت :**

موافق وبشدة ، موافق ، غير متأكد ، غير موافق ، غير موافق وبشدة

	موافق وبشدة	موافق	غير متأكد	غير موافق	غير موافق وبشدة
35. أنتظر حصة التربية الرياضية بشوق.	O	O	O	O	O
36. أنظر الى حصة التربية الرياضية كتغير محبب لى خلال اليوم الدراسى.	O	O	O	O	O
37. حصة التربية الرياضية تعتبر مضيعة للوقت.	O	O	O	O	O
38. الأنشطة والألعاب فى حصة التربية الرياضية عنيفة جدا بالنسبة لى.	O	O	O	O	O
39. لا أحبذ حصة التربية الرياضية.	O	O	O	O	O
40. غالبا ما يراودنى إحساس بعدم إنتمائى الى هذة الأنشطة.	O	O	O	O	O
41. أجد فائدة كبيرة من حصة التربية الرياضية و أود لو أن تكون هناك زيادة فى حصص التربية الرياضية.	O	O	O	O	O
42. حصة التربية الرياضية لها تأثير إيجابى على صحتى الشخصية.	O	O	O	O	O
43. حصة التربية الرياضية تتركز على الألعاب الرياضية والمباريات وليس لها اى تأثير على مستقبلى الأكاديمى.	O	O	O	O	O
44. حصة التربية الرياضية ليس لها اى تأثير على صحتى الشخصية.	O	O	O	O	O
45. أتمنى أن تلغى حصة التربية الرياضية من المنهج.	O	O	O	O	O
46. مادة التربية الرياضية لا تقدم اى شىء نحوا مستقبلى الأكاديمى.	O	O	O	O	O

Appendix (D)

Study of lifestyle and physical activity patterns of British and Kuwaiti 15 - 16 year old boys.

School : _____

Year : _____

Name : _____

Date of Birth : _____ / _____ / _____

Date : _____ / _____ / _____

Appendix (D)

*** * * Indicate your attitude toward the following statements by ticking one of the boxes.**

Strongly Agree **(SA),** Agree **(A),** Neutral **(N),** Disagree **(D),** Strongly Disagree **(SD).**

1. I only like physical activities that won't make me tired.	**SA**	**A**	**N**	**D**	**SD**
2. Physical activity gives me a sense of accomplishment.	**SA**	**A**	**N**	**D**	**SD**
3. Physical activity is the last thing on my mind when it come to spending my free time.	**SA**	**A**	**N**	**D**	**SD**
4. PE really has nothing to do with education.	**SA**	**A**	**N**	**D**	**SD**
5. I don't have time for physical activity.	**SA**	**A**	**N**	**D**	**SD**
6. Most activities are for the fit and slim student.	**SA**	**A**	**N**	**D**	**SD**
7. I feel I've accomplished something after a particularly strenuous work-out	**SA**	**A**	**N**	**D**	**SD**
8. I usually have something better to do than physical activity.	**SA**	**A**	**N**	**D**	**SD**
9. I have no desire to participate in various physical activities.	**SA**	**A**	**N**	**D**	**SD**
10. PE makes me weary and I don't like that.	**SA**	**A**	**N**	**D**	**SD**
11. I feel time I use for physical activities is well spent.	**SA**	**A**	**N**	**D**	**SD**
12. I don't see why I have to take PE	**SA**	**A**	**N**	**D**	**SD**
13. PE is a waste of time better spent on academic lessons.	**SA**	**A**	**N**	**D**	**SD**
14. I avoid physical activity if at all possible.	**SA**	**A**	**N**	**D**	**SD**

Appendix (D)

*** * * Indicate your attitude toward the following statements by ticking one of the boxes.**

Strongly Agree **(SA)**, Agree **(A)**, Neutral **(N)**, Disagree **(D)**, Strongly Disagree **(SD)**.

---

15. Physical activity gives me more energy	SA	A	N	D	SD
16. physical activity relaxes me.	SA	A	N	D	SD
17. I prefer TV to physical activity.	SA	A	N	D	SD
18. If it's cold outside I don't like to participate in physical activity.	SA	A	N	D	SD
19. Physical activity gives me a sense of satisfaction.	SA	A	N	D	SD
20. The harder I work at an activity the better I feel.	SA	A	N	D	SD
21. Physical activity is an important part of my daily routine.	SA	A	N	D	SD
22. I can't wait for the PE lesson to finish.	SA	A	N	D	SD
23. I feel miserable during PE.	SA	A	N	D	SD
24. PE first thing in the morning is a terrible way to start the day.	SA	A	N	D	SD
25. Physical activity is too much bother.	SA	A	N	D	SD
26. If I had the choice I wouldn't attend PE.	SA	A	N	D	SD
27. Warm-ups are a waste of time.	SA	A	N	D	SD
28. PE is too tiring.	SA	A	N	D	SD

Appendix (D)

*** * * Indicate your attitude toward the following statements by ticking one of the boxes.**

Strongly Agree **(SA),** Agree **(A),** Neutral **(N),** Disagree **(D),** Strongly Disagree **(SD).**

---

29. I don't like PE and resent being forced to do it.	SA	A	N	D	SD
30. Running activities are too exhausting.	SA	A	N	D	SD
31. Although PE can be tiring it's worth it.	SA	A	N	D	SD
32. I feel strenuous activities are dangerous and better avoided.	SA	A	N	D	SD
33. In physical activity I have a better chance to excel.	SA	A	N	D	SD
34. PE simply is not as important as other subjects at school.	SA	A	N	D	SD
35. I spend most of my free time doing some sort of physical activity.	SA	A	N	D	SD
36. Compulsory PE makes me dislike physical activity.	SA	A	N	D	SD
37. I enjoy physical activity simply because I prefer to be active.	SA	A	N	D	SD

Appendix (D)

دراسة مقارنة لنمط الحياة و الميول لمزاولة الأنشطة الرياضية بين طلبة بريطانيا و الكويت لسن 15 – 16 سنة.

أسم المدرسة : _____

أسم الطالب : _____

الصف : _____

تاريخ الميلاد: _____

تاريخ اليوم : _____

Appendix (D)

*** * * بين ماهو شعورك إتجاه العبارات التالية ، وذلك بوضع (x) أمام العبارة إذا كنت :**

موافق وبشدة ، موافق ، غير متأكد ، غير موافق ، غير موافق وبشدة

	موافق وبشدة	موافق	غير متأكد	غير موافق	غير موافق وبشدة
1. أفضل التمرينات الرياضية التى لا تحتوى على إجهاد عضلى.	O	O	O	O	O
2. التمرينات الرياضية تولد لدى شعور بالأنجاز.	O	O	O	O	O
3. مزاولة الأنشطة الرياضية هو آخر شىء أفكر لقتل وقت فراغى.	O	O	O	O	O
4. فى إعتقادى أن مادة التربية الرياضية ليس لها آى صلة بالعمليةالتربوية.	O	O	O	O	O
5. لا يتوفر لدى الوقت الكافى لمزاولة الأنشطة الرياضية.	O	O	O	O	O
6. فى إعتقادى أن الأنشطة الرياضية تقتصر على الأشخاص الذين يتمتعون بالجسم الرياضى واللياقة البدنية.	O	O	O	O	O
7. بعد إنتهائى من عمل نشاط رياضى مجهد أشعر بالأنتعاش .	O	O	O	O	O
8. دائما يوجد لدى شىء أهم من الرياضة أستغلة لغضاء وقت فراغى.	O	O	O	O	O
9. ليست لدى أية رغبة فى المشاركة فى الأنشطة الرياضية.	O	O	O	O	O
10. غالبا مايراودنى شعور بالضجر خلال حصص التربية الرياضية.	O	O	O	O	O
11. فى إعتقادى أن قضاء وقت فراغى فى مزاولة الأنشطة الرياضية له مردود إيجابى.	O	O	O	O	O

Appendix (D)

*** * * بين ماهو شعورك إتجاه العبارات التالية ، وذلك بوضع (x) أمام العبارة إذا كنت :**

موافق وبشدة ، موافق ، غير متأكد ، غير موافق ، غير موافق وبشدة

	موافق وبشدة	موافق	غير متأكد	غير موافق	غير موافق وبشدة
12. لا أدرى ما هو السبب فى فرض حصة التربية الرياضية علينا.	O	O	O	O	O
13. وقت حصة التربية الرياضية فى إعتقادى مضيعة للوقت و يجب أستغلالة لحصص علمية أخرى.	O	O	O	O	O
14. أحاول أن أتحاشى مزاولة الأنشطة الرياضية كلما أمكن.	O	O	O	O	O
15. الأنشطة الرياضية تملأنى بالنشاط و الطاقة.	O	O	O	O	O
16. الأنشطة الرياضية تعطينى شعور براحة والأسترخاء.	O	O	O	O	O
17. أفضل قضاء وقت فراغى فى مشاهدة التلفاز على مزاولة الأنشطة الرياضية.	O	O	O	O	O
18. لا واحبذ مزاولة الأنشطة الرياضية عندما يكون الجو باردا نوعا ما.	O	O	O	O	O
19. مزاولة الأنشطة الرياضية يعطينى شعور بالرضا.	O	O	O	O	O
20. بعد مزاولة التمرينات الرياضية غالبا ما يراودنى شعور بالأرتياح خصوصا اذا كانت التمرينات الرياضية ذات طابع حاد.	O	O	O	O	O
21. مزاولة الأنشطة الرياضية تعتبر بالنسبة لى جزء لا يتجزء من جدولى اليومى.	O	O	O	O	O
22. أنتظر أنتهاء حصة التربية الرياضية بفارغ الصبر.	O	O	O	O	O

Appendix (D)

*** * * بين ماهو شعورك إتجاه العبارات التالية ، وذلك بوضع (x) أمام العبارة إذا كنت :**

موافق وبشدة ، موافق ، غير متأكد ، غير موافق ، غير موافق وبشدة

	موافق وبشدة	موافق	غير متأكد	غير موافق	غير موافق وبشدة
23. أشعر بتعاسة خلال حصص التربية البدنية.	O	O	O	O	O
24. أن يبدأ اليوم المدرسى بحصة التربية الرياضية شىء غير محبب لى.	O	O	O	O	O
25. مزاولة الأنشطة الرياضية تعتبر مصدر ازعاج بالنسبة لى.	O	O	O	O	O
26. لو ترك الأمر لى لما حضرة اى من حصص التربية الرياضية.	O	O	O	O	O
27. عملية الأحماء (التسخين) تعتبر مضيعة للوقت.	O	O	O	O	O
28. أشعر بتعب خلال حصة التربية الرياضية.	O	O	O	O	O
29. لا أحبذ حصة التربية الرياضية وأشعر بالأمتعاض عندما أجبر على الأشتراك.	O	O	O	O	O
30. عملية الجرى بانواعها تعتبر مصدر تعب بنسبة لى.	O	O	O	O	O
31. مع أن حصص التربية الرياضية تعتبر متعبة إلا أنها تستحق العناء.	O	O	O	O	O
32. أشعر أن الأنشطة الرياضية التى تتسم بالحدة تعتبر خطرة والأجدى أن تتلافى او أن تلغى من التمرينات.	O	O	O	O	O
33. فرصتى فى الأبداع أجدها أفضل وخاصة عند مزاولة الأنشطة الرياضية على إختلاف أنواعها.	O	O	O	O	O
34. مادة التربية الرياضية ليس لها ثقل علمى مثل باقى المواد الأخرى.	O	O	O	O	O

Appendix (D)

*** * * بين ماهو شعورك إتجاه العبارات التالية ، وذلك بوضع (x) أمام العبارة إذا كنت :**

موافق وبشدة ، موافق ، غير متأكد ، غير موافق ، غير موافق وبشدة

	موافق وبشدة	موافق	غير متأكد	غير موافق	غير موافق وبشدة
35. بالنسبة لى معظم اوقات فراغى أقضية فى ممارسة نشاط رياضى معين.	O	O	O	O	O
36. أرغامى على أخذ مادة التربية الرياضية ولد عندى شعور بكراهية أية نوع من أنواع الأنشطة الرياضية.	O	O	O	O	O
37. أحب مزاولة الأنشطة الرياضية حيث اننى أحب أن أكون مفعم بالنشاط و الحيوية.	O	O	O	O	O

Appendix (E)

Study of lifestyle and physical activity patterns of British and Kuwaiti 15 - 16 year old boys.

School : _____

Year : _____

Name : _____

Date of Birth : _____

Date : _____

Appendix (E)

1. Indicate by writing all that apply from **A - J** which components are **Motor Fitness**, and which are **Health-related Fitness** .

1. Motor Fitness:

_____

2. Health-related Fitness:

_____

A. Agility.
B. Balance
C. Body composition.
D. Cardiorespiratory Fitness.
E. Coordination
F. Endurance.
G. Flexibility.
H. Muscular Strength.
I. Power.
J. Speed.

---

2. Fill in the blank with the right word.

A. _____ is " The capacity of your heart, blood vessels, and lungs to function efficiently during vigorous, sustained activity. Such as running, swimming or cycling.

B. _____ is " The ability to move a body joint and corresponding muscle groups through the full range of motion without undue strain."

C. Bone, muscle, connective tissue, cartilage, skin, and nerves are all considered _____ .

D. Body fat is divided into two basic categories; _____ and _____ .

E. _____ is the capacity of the muscle to exert a force against a resistance once.

F. _____ is the ability of the muscle to exert force repeatedly or to hold a fixed or static contraction over a period of time.

G. One pound of fat equals _____ calories.

Appendix (E)

3. Define the following:

A. Aerobic: _____

_____

_____

B. Anaerobic: _____

_____

_____

C. Intensity of exercise: _____

_____

_____

D. Duration of exercise: _____

_____

_____

E. Frequency of exercise: _____

_____

_____

4. **A.** Write two of the physiological changes due to cardiovascular fitness.

1.

2.

Appendix (E)

4. B. Write down three of the safety rules for stretching exercise.

1.

2.

3.

---

5. A 16 year old has a resting heart rate of 60 beat per.minute calculate a target heart rate of 70% of his maximum heart rate reserve.

Appendix (E)

دراسة مقارنة لنمط الحياة والميول لمزاولة الأنشطة الرياضية بين طلبة بريطانيا والكويت لسن 15 – 16 سنة.

أسم المدرسة : _____

أسم الطالب : _____

الصف : _____

تاريخ الميلاد: _____

تاريخ اليوم : _____

Appendix (E)

1. أختر من المصطلحات التالية ، مكونات اللياقة الصحية و مكونات اللياقة البدنية ، وذلك بكتابة الرقم الدال على المصطلح فى المكان المناسب :

1. الرشاقة .	**6. التوازن .**
2. قوة التحمل العضلى(الجلد العضلى) .	**7. المرونة .**
3. مركبات الجسم .	**8. القوة العضلية .**
4. الجلد الدورى التنفسى .	**9. قوة الأنطلاق .**
5. التوافق .	**10. السرعة .**

1. اللياقة البدنية : _____

2. اللياقة الصحية : _____

* * * * * * * * * * * * * * * * *

2. املاء الفراغات التالية بالكلمة المناسبة :

1. ---------- " هى قدرة القلب والرئتين والأوعية الدموية على العمل بأفضل صورة ممكنة ولأطول فترة ممكنة خلال الأنشطة الرياضية المختلفة ." مثل الجرى السباحة ، و ركوب الدراجات .

2. ---------- " هى القدرة على حركة المفاصل والعضلات و الأربطة خلال المدى الحركى لها وبدون الشعور بألام . "

3. تعتبر العضام ، العضلات ، الأربطة ، الجلد ، و الأعصاب جميعا على انها ---------- .

4. تنقسم الدهون فى جسم الأنسان الى قسمين هما : (أ) ---------- و

(ب) ---------- .

5. ---------- " هى قدرة العضلات على بذل أقصى قوة ممكنة لمجابهة مقاومة او قوة خارجية ولمرة واحدة . "

6. ---------- " هى قدرة العضلات على بذل قوة بصورة متكررة او القدرة على الحفاظ على انقباض العضلة لفترة زمنية محددة ."

(2) 7. نصف كيلوا من الدهون فى جسم الأنسان = ---------- كم من السعرات الحرارية .

* * * * * * * * * * * * * * * * * * *

3. عرف كل من الأتـى :

(أ) التمرينات الهوائية : _____

_____

(ب) التمرينات اللا هوائية : _____

_____

(ج) حدة التمرين : _____

_____

(د) مدة التمرين : _____

_____

(ه) تكرار التمرين : _____

_____

4. (أ) أذكر اثنين من التغيرات الفسيلوجية الناتجة عن تمرينات اللياقة للجهازين الدورى و التنفسى :

1. _____

2. _____

Appendix (E)

(4)(ب) أكتب ثلاثا من الشروط الواجب اتباعها لتلافى حدوث اى اصابة عند القيام بتمرينات المرونة:

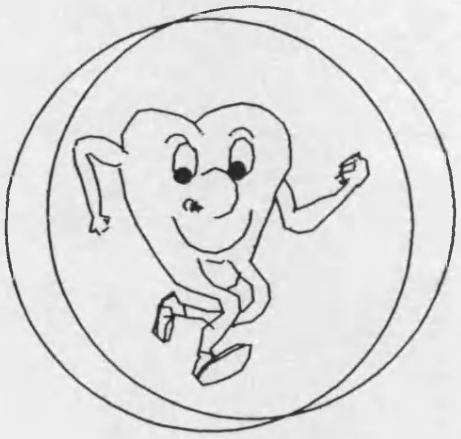
1. _____

2. _____

3. _____

* * * * * * * * * * * * * * * * * * *

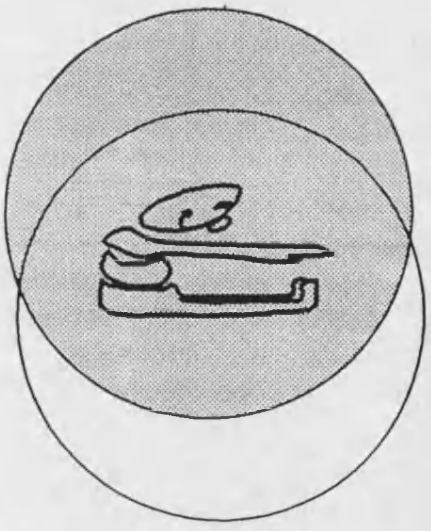
5. أراد احد الأشخاص القيام بأداء بعض التمرينات الرياضية وذلك بحدة اقصاها 70 ٪ من احتياطى ضربات القلب لدية ، علما بانه يبلغ من العمر 16 سنة ، وقد بلغت عدد ضربات القلب لدية فى حالة الراحة 60 نبضة فى الدقيقة الواحدة ، **ماهى الحدة التمرين التى يجب أن علية أن يتدرب عليها حتى يصل الى 70٪ من احتياطى ضربات القلب لدية ؟**

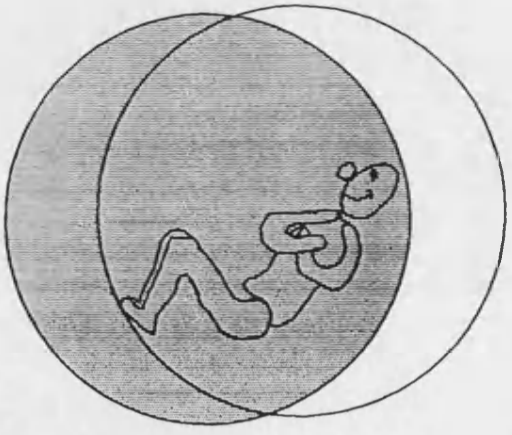


University of Bath
School of Education

Use it or lose it

A Programme Encouraging Activity for Adolescents





Taha A. Al-Jaser

THE DIFFERENCE BETWEEN HEALTH - RELATED FITNESS AND MOTOR FITNESS:

ONE UNIT:

- The students will try to distinguish the difference between the **HEALTH-RELATED FITNESS** and **MOTOR FITNESS.**

EXERCISE PRESCRIPTION

ONE UNIT:

- Students will be able to understand the three principles of exercise; intensity, duration, and frequency.
- Students will be able to calculate their target heart rate.
- Students will be able to work at different target heart rates.

CARDIOVASCULAR FITNESS

FOUR UNITS:

- The students will be able to define cardiovascular fitness.
- The students will be able to take his heart rate within 10 seconds during the work-out and at rest.
- Students will recognize the value of cardiovascular fitness activities.
- Students will follow the safety rules during any cardiovascular fitness activity.
- Students will be able to recognize physiological changes due to exercise; lower heart rate at rest and at moderate level of exercise, greater maximal exercise capacity at different heart rates.
- Students will be able to perform 3 different activities at different heart rates.

FLEXIBILITY

FOUR UNITS :

- Students will define flexibility.
- Students will recognize the different types of flexibility.
- Students will recognize the value of flexibility.
- Students will follow the safety rules of any stretch.
- Students will recognize the physiological changes of flexibility; increase range of motion, increase tolerance of physical work-out.

- Students will be able to perform different flexibility tasks.

MUSCULAR STRENGTH AND ENDURANCE

FOUR UNITS :

- Students will be able to distinguish difference between muscular strength and muscular endurance.
- Students will be able to recognize different type of muscular work out.
- Students will recognize the value of strength and endurance.
- Students will recognize the physiological changes of muscular strength or endurance program.
- Students will follows safety rules during a work-out.
- Students will be able to perform three different types of strength and endurance exercises.

BODY COMPOSITION

FOUR UNITS:

- Students will be able to define body composition.
- Students will write the risks of obesity and the benefits of having a lean body.
- Students will state how exercise can control lean to fat ratio.
- Students will understand the difference between **AEROBIC** and **ANAEROBIC** activity.
- Students will be able to perform one aerobic and one anaerobic activity.

HEALTH - RELATED FITNESS TESTS

THREE UNITS:

- To keep in touch with progress and areas which need more attention.

POST TESTING

ONE UNIT:

- **HEALTH - RELATED FITNESS TEST** will be administered.
- Written tests will be administered.
  A. Health behaviour questionnaires.
  B. Attitude towards physical activity and physical education.

C. Knowledge tests of the subject matter.
D. Individual interview with students and teachers.

INTRODUCTION :

Why physical fitness ?

- Your body was made to be used
- Your body cannot handle the stress of sitting or standing all day
- Your body thrives on activity
- You need to use energy to gain energy
- A physically fit body is more able to function at its full potential
- Fit people tend to feel good about themselves

Distribute handouts while explaining the results of the testing and setting individual goals for each student

Why Physical fitness ?

* Your body was made to be used .

* Fit people tend to feel good about themselves.

* You need to use energy to gain energy.

* A physically fit body is more able to function at its' full potential.

* Your body thrives on Activity.

* Your body cannot handle the stress of sitting or standing all day

Test : One Mile Run Walk Time in min:sec

Trials

Name	1	2	3	4	5	6	7	8	Comments

Test : Sit & Reach the Distance in cm.

Name	Trials 1	2	3	4	5	6	7	8	Comments

Test : Sit - Ups the Number in one min.

Name	Trials 1	2	3	4	5	6	7	8	Comments

Test : Sum of Triceps and Subscapular Skinfolds in mm.

Name	Trials 1	2	3	4	5	6	7	8	Comments

The Health - Related Fitness Test

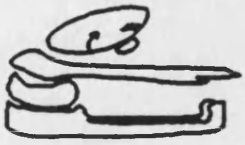
Name : _____

Year : _____ **Height :** _____ **cm.**

Date of Birth : / / 19 **Weight :** _____ **Kg.**

* *

1. Distance Run : _____ **Time**



2. Sit & Reach : _____ **cm.**

3. Sit - Ups : _____ **In one min.**

4.Skinfolds	1	2	3	Median
A. Triceps				
B. Subscapular				
C. Calf				

The One Mile Walk Run time in min:sec

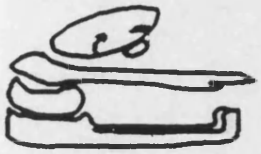
Time in min:sec

1 2 3 4 5 6 7 8

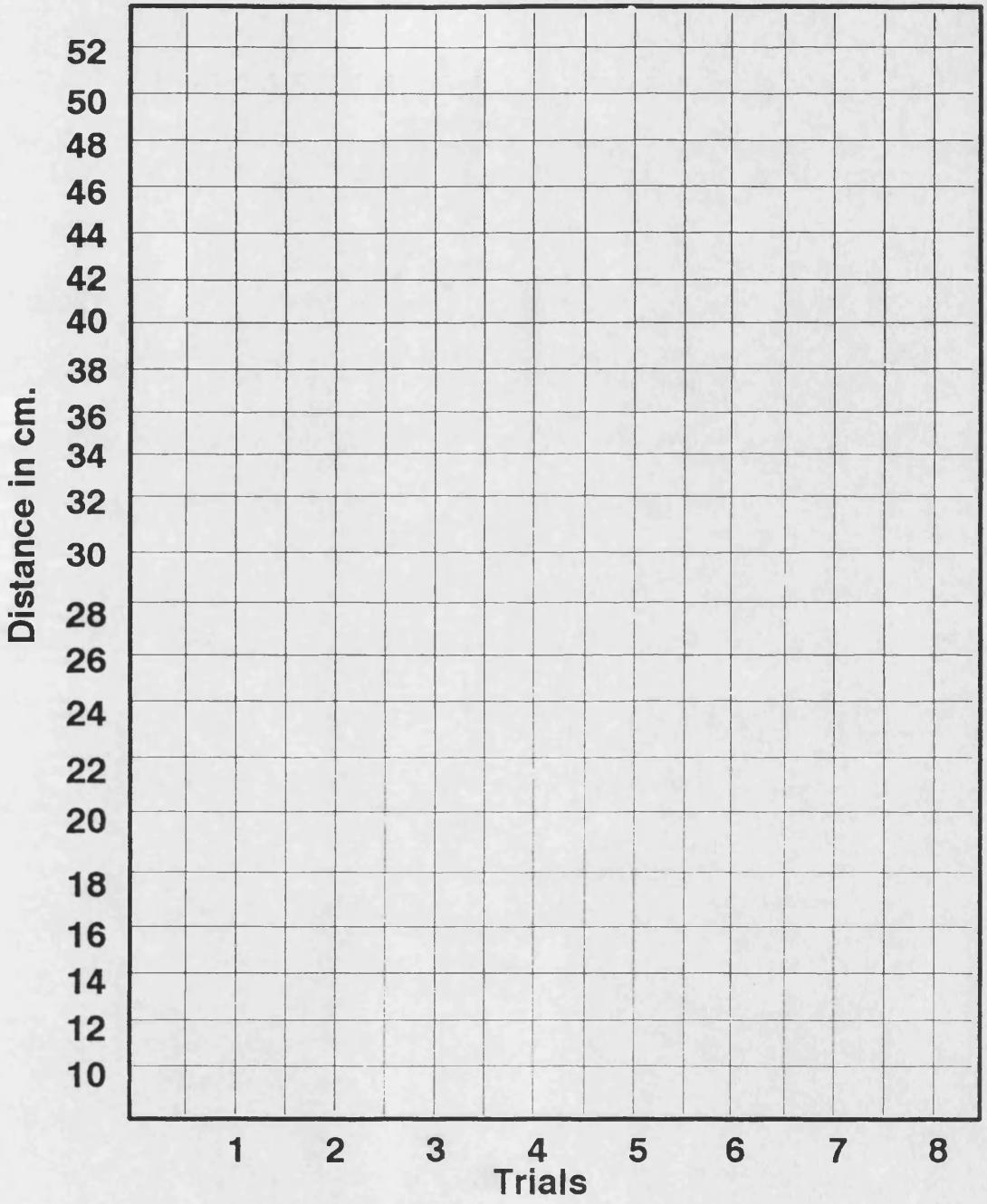
Trials

Objectives						

Achieved						



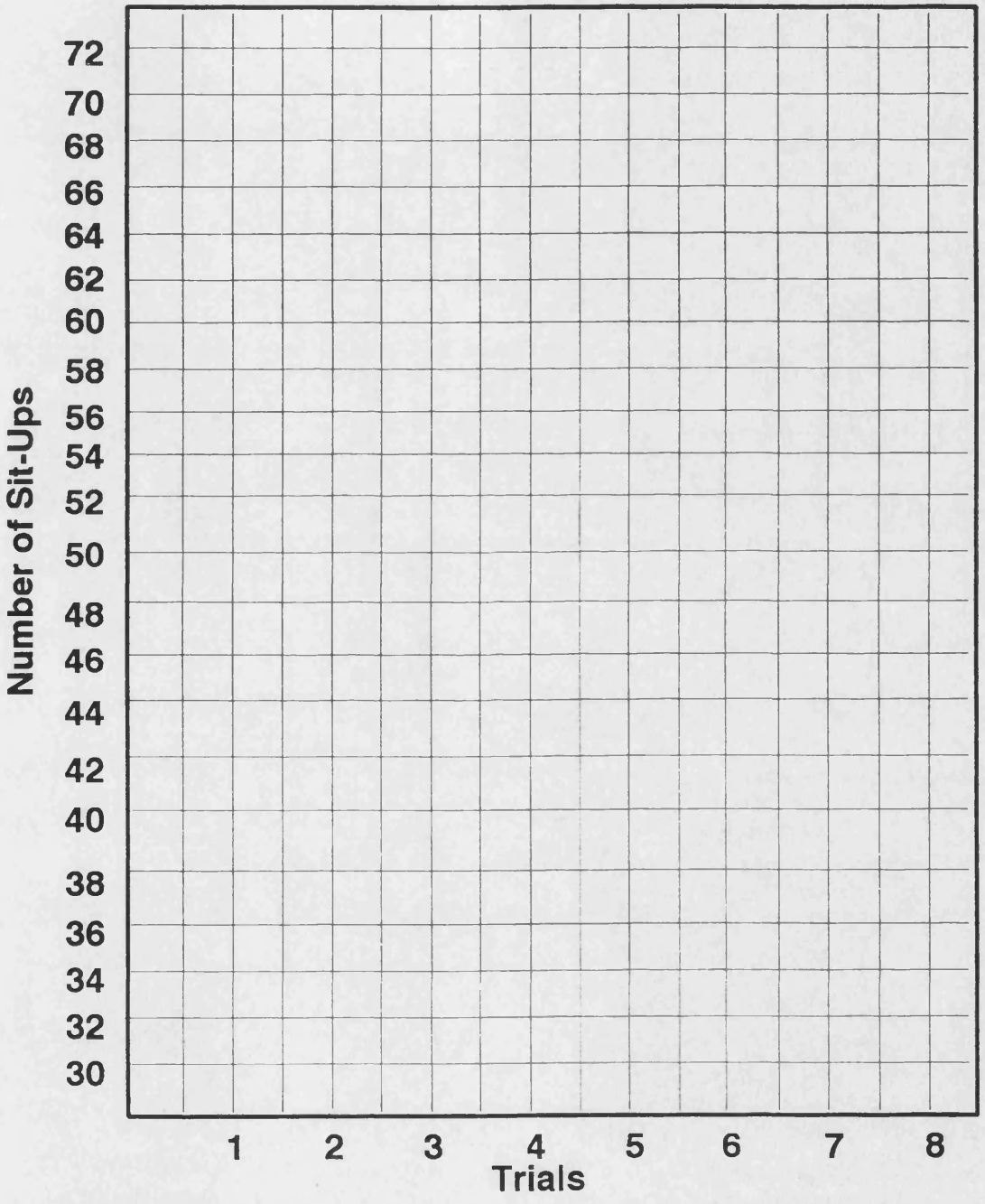
The Sit & Reach the distance in cm.



Objectives						

Achieved						

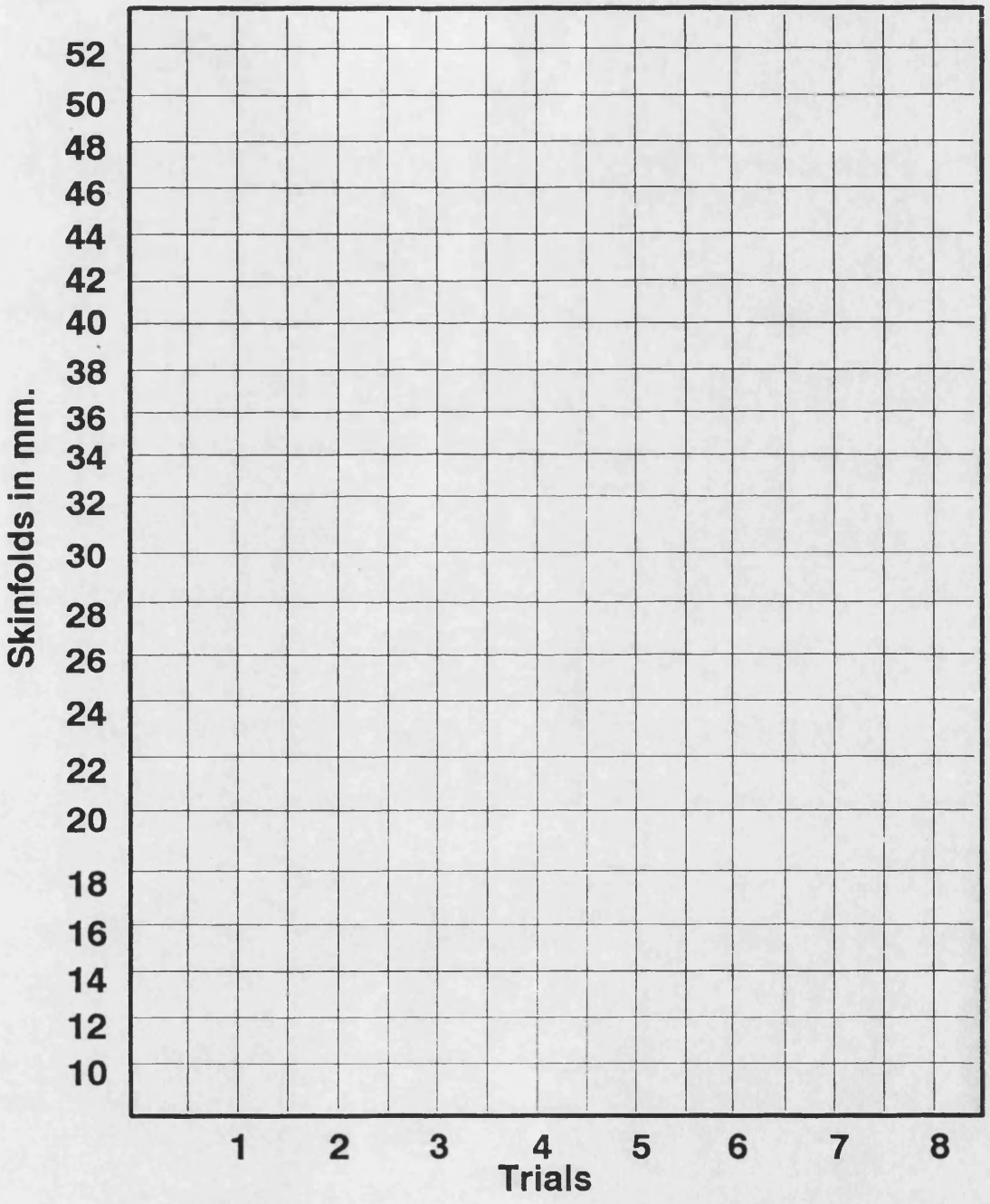
The number of Sit-Ups in one minute



Objectives						

Achieved						

The Sum of Triceps plus Subscapular Skinfolds in mm.



Objectives						

Achieved						

Appendix (F)

Contract !

I will increase (or maintain) my average daily physical activities, from my present rate

(TIME)		(TIME)
_____	or , to	_____ or
(MILES)		(MILES)

for the next three weeks.

*D*uring this time *I* will seek the help of : _____

in order to reach my goal of covering the equivalent distance as between

_____	and	_____
(City)		(City)

MY RESPONSIBILITIES:

1. **To** focus on increasing my physical activities (i.e. Walking ,.Jogging , Cycling , ...) during my free time.

2. **To** reward myself on each week that *I* increase my total distance or my total time either with a T shirt or going to movie , for my personal satisfaction.
   I will forego this reward if do not have any improvement in time or distance spent on physical activities.

3. *I*. will record my physical activities in my journal each night.

MY HELPER'S RESPONSIBILITIES:

1. **To** participate with me , when possible , during my physical activities , and to support my effort to be more ***active.***

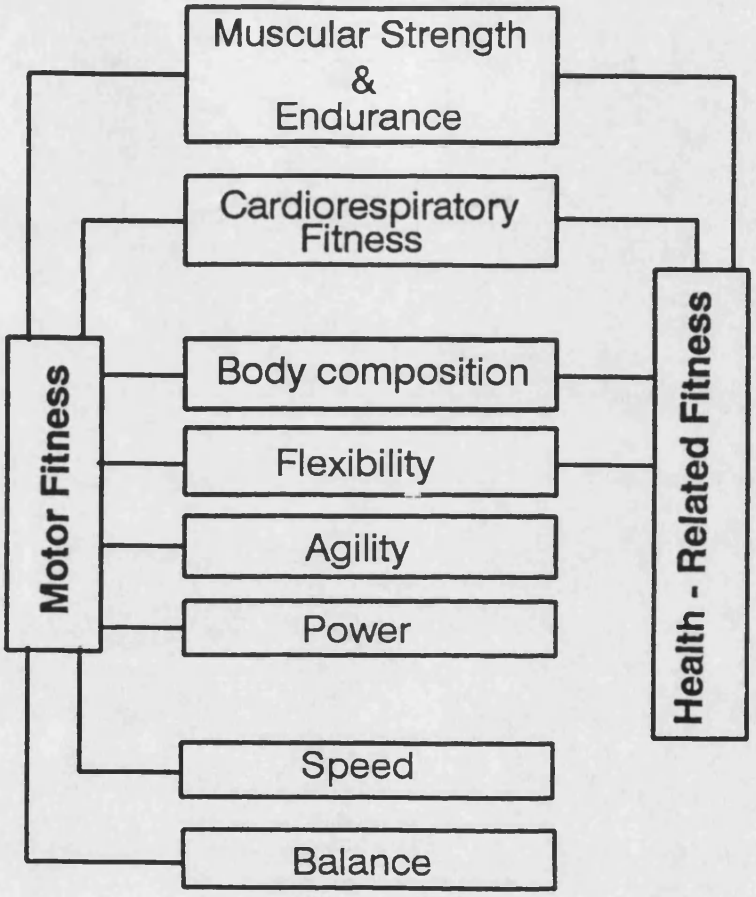
2. **To** help me review the activities in my journal each week.

	Signature	**Date**
The student :	_____	___/___/___
The helper :	_____	___/___/___
The teacher :	_____	___/___/___

Daily Activity Journal

Date	Type of physical activities?	For how long in time or distance?	To benefit what?	Comments
		Total time or distance = _____		
		Total time or distance = _____		

THE DIFFERENCE BETWEEN HEALTH - RELATED FITNESS AND MOTOR FITNESS

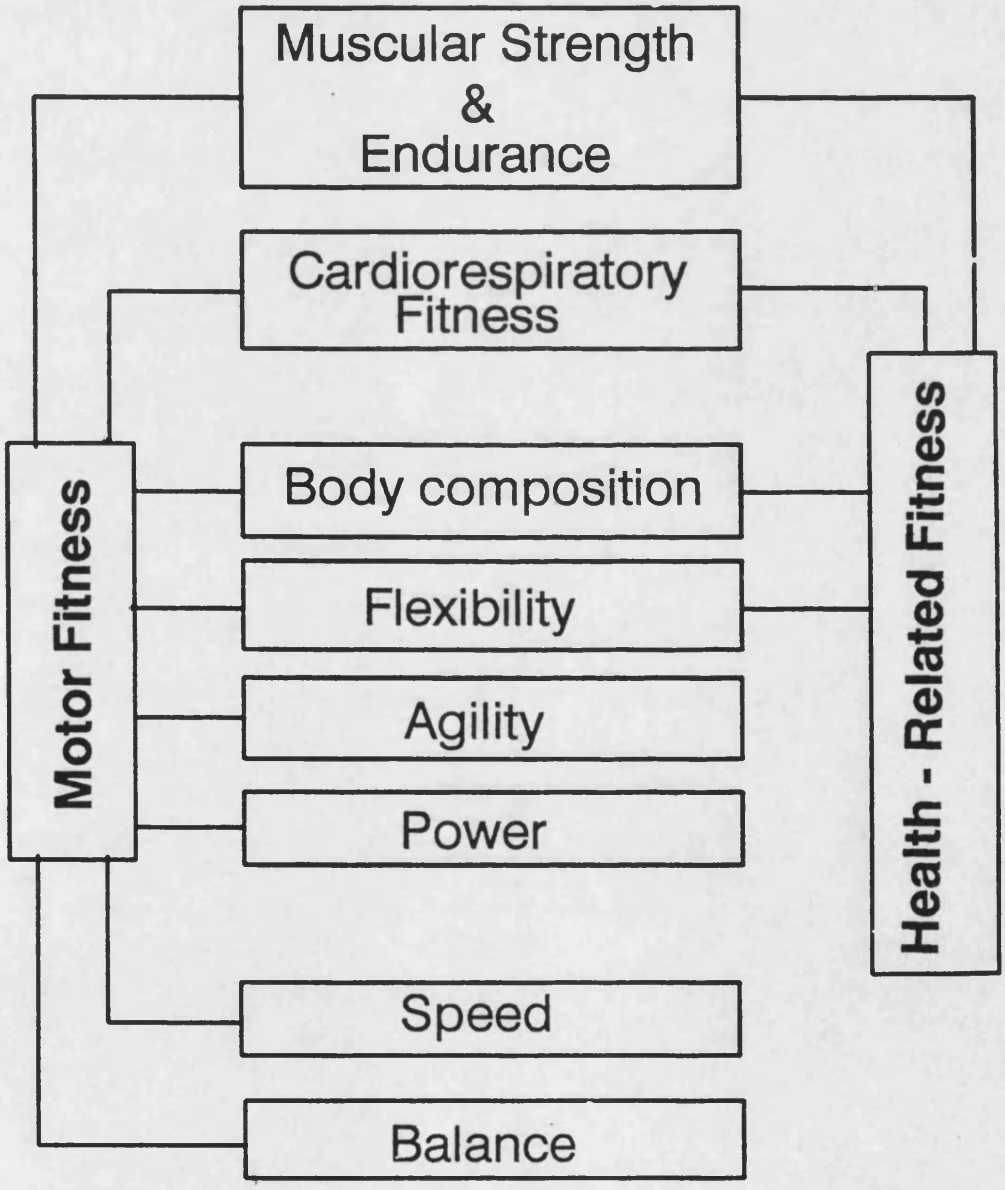


After a brief 5 minute warm-up students will proceed to various stations around the class area. At each station there will be an exercise listed the students will do that activity and write down if it's **HEALTH - RELATED FITNESS** or **MOTOR FITNESS**.

Various activities could include:

* Walking or running around a bench.
* Standing long jump.
* Jog in place.
* Sit and reach toes while knees are extended.
* Shuttle run for 20 metres.
* Hand stands against the wall.
* Vertical jump to touch a mark on the wall.
* Push-ups.

The components of Motor Fitness and Health - Related Fitness



* Tick whether the activity is H.R.F. or Motor fitness.

Activity	H.R.F	Motor fitness	Comment
Running			
Standing long jump			
20 m. Shuttle run			
Sit & Reach			
10 Push - ups			
Walking			
Squat thrusts			
Vertical iump			
5 Pull - ups			
Softball throw			
Skinfold measurement			
50 Yard dash			
12 min. run			
Hand Stand			

EXERCISE PRESCRIPTION:

INTENSITY = How hard do I have to work-out ?

220 - AGE = Maximum Heart Rate

Maximum Heart Rate - Resting Heart Rate = Heart Rate Reserve

Heart Rate Reserve x .70 = _____ + Resting Heart Rate = Target Heart Rate

* * * *

DURATION = How long do I have to work-out?

This is directly related to the intensity of the work-out. The lower the intensity the longer the duration and vice-versa. The accepted time is usually 20 to 30 minutes of moderate activity.

* * * *

FREQUENCY = How often do I have to work-out ?

Fitness is something that needs constant attention. It cannot be saved up. To keep fit you must keep active the acceptable minimum is 3 times a week for 20 to 30 minutes per session.

* * * *

ACTIVITY:

Have the students take their pulse for 10 seconds, this will be their resting heart rate. Then have them calculate their target heart rate. They then have to try and achieve this heart rate during regular activity; running, jogging, skipping rope, ice skating etc...
They should also work at a higher intensity and see how that feels.

*** INTENSITY = How hard do I have to work - out ?**

220 - Age = Maximum Heart Rate

Maximum Heart Rate - Resting Heart Rate = Heart Rate Reserve

Heart Rate Reserve x .70 = ? + Resting Heart Rate = Target Heart Rate

* * * * * * * * * * * * * * * * *

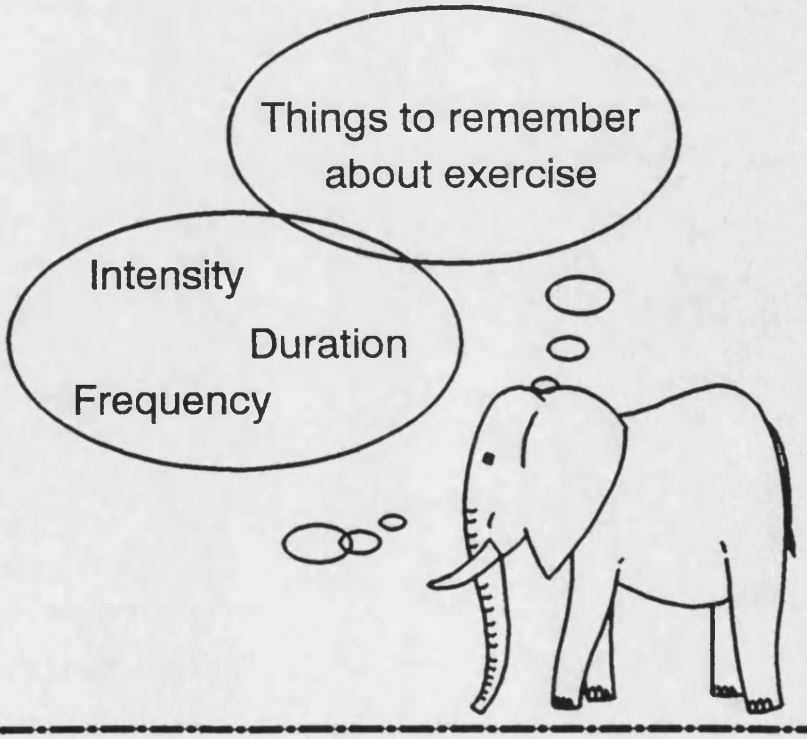
*** DURATION = How long do I have to work - out ?**

This is directly related to the intensity of the work - out.
The lower the intensity the longer the duration and vice - versa.
The accepted time is usually 20 - 30 minutes of moderate activity.

* * * * * * * * * * * * * * * * *

*** FREQUENCY = How often do I have to work - out ?**

Fitness is something that needs constant attention.
It cannot be saved up . To keep fit you must keep active
the acceptable minimum is 3 time a week for 20 - 30 minutes
per session.



Record your resting heart rate = _____

Calculate your target heart rate at 60% - 75% of your heart rate reserve.

target heart rate at _____% = _____ beat per.min.

Monitor your heart rate during activity and record it below. Write the activity you're engaged in and if you reached your target heart rate.

Activity	H.R.	Comments

CARDIOVASCULAR FITNESS

Circuit training for cardiovascular fitness could include:
* Walking.
* Leaping.
* Bench stepping.
* Hopping.
* Skipping.
* Rope skipping.
* Jogging.

Definition: " The capacity of your heart, blood vessels, and lungs to function efficiently during vigorous, sustained activity. Such as running, swimming, or cycling". (Getchell, 1992, Physical Fitness A Way of Life, 4th ed.)

The safety rules during cardiovascular fitness training:

- **Set appropriate goals**
- **Be cautious of exhaustion or medical problems**
- **Be aware of extreme heat, cold, or air pollution**
- **Drink plenty of fluids**
- **Be cautious and go slow after illness or injury**
- **Listen to your body signals**
- **Monitor your heart rate and respiration**

The students will work in pairs. At the start of the lesson each student will take his heart rate for ten seconds and record it on his sheet, the heart rate will be recorded at the end of each station or work area. When students are cooling down after completion of all stations ask students to discuss:

Why the heart rates are different from one student to another?

Why the heart rates differ from work load to work load?

Ask the students to keep track of their heart rate throughout the day and record it, the time and place taken.

Cardiovascular fitness

"The capacity of your heart,blood vessles,and lungs to function efficiently during vigorous,sustained activity. Such as running,swimming,or cycling."

Reading	Heart Rate	What are you doing?
Resting H.R		
1st H.R.		
2nd H.R.		
3rd H.R		
4th H.R.		
5th H.R.		

* Why are the heart rates different from one student to another?

* Why do the heart rates differ from work load to work load?

* Keep track of your heart rate throughout the rest of the day.

Reading	Heart Rate	Time	What are you doing?
1st H.R.			
2nd H.R.			
3rd H.R.			
4th H.R.			
5th H.R.			
6th H.R.			
7th H.R.			

CARDIOVASCULAR FITNESS

The benefits of cardiovascular fitness:

* **Increases the energy level.**
* **Maintain appropriate body fat.**
* **Counters the onset of cardiovascular disease.**
* **Look good and feel good about yourself.**
* **The body is better able to cope with stress and fatigue.**

ACTIVITY

After a five minute warm-up have each student do an exercise that promotes cardiovascular fitness for 30 seconds, have them measure their heart rate for six seconds .Repeat as above with the same exercise but for 45 seconds and record the heart rate on the students sheet ; once more do the same exercise but for one minute and record the heart rate; at the end of class or during the cool down discuss the reason for varied heart rate during the different exercise time periods.

* * * *

Have the students take the heart rate of three adults and have them write some comment about their resting heart rate in relation to the target heart rate or heart rate reserve.

* * * *

Have the students write ten different exercises that improve cardiovascular fitness, the exercises must not be game oriented.

The benefits of cardiovascular fitness

* Increases the energy level.
* Maintain appropriate body fat.
* Counters the onset of cardiovscular disease.
* Look good and feel good about yourself.
* Better able to cope with stress and fatigue.

Reading	Heart Rate	What are you doing?	comments
1st H.R.			
2nd H.R.			
3rd H.R.			
4th H.R.			
5th H.R.			
6th H.R.			

* The heart rate of three adults.

Adults	Sex	Age	H.R.	Comments
1st				
2nd				
3rd				

Write 10 different exercises that improve cardiovascular fitness, that are not games oriented.

#	Activities
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

CARDIOVASCULAR FITNESS

The safety rules during cardiovascular fitness training:

* **Set appropriate goals.**
* **Be cautious of exhaustion or medical problems.**
* **Be aware of extreme heat, cold, or air pollution.**
* **Drink plenty of fluids.**
* **Be cautious and go slow after illness or injury.**
* **Listen to your body signals.**
* **Monitor your heart rate and respiration.**

* * * *

ACTIVITY:

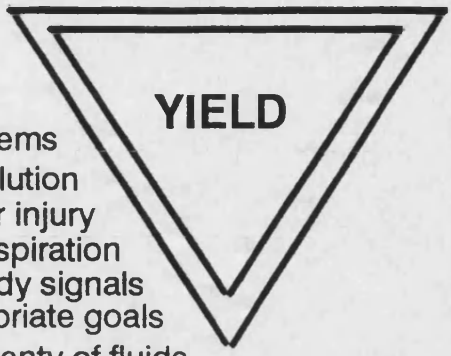
Each student will bring his list of ten activities. Working in pairs they will alternately do each of the ten activities on each list. The teacher will circulate in the class to discuss various aspects of the exercises being performed.

* * * *

Ask the students to write five game related activities that affect cardiovascular fitness.
Have the students interview their parents:

- What do they think is the greatest health benefit of exercise?
- Do they take part in any regular activities?
- Remember to indicate if it is the mothers' or the fathers' response.

The saftey rules during cardiovascular fitness training

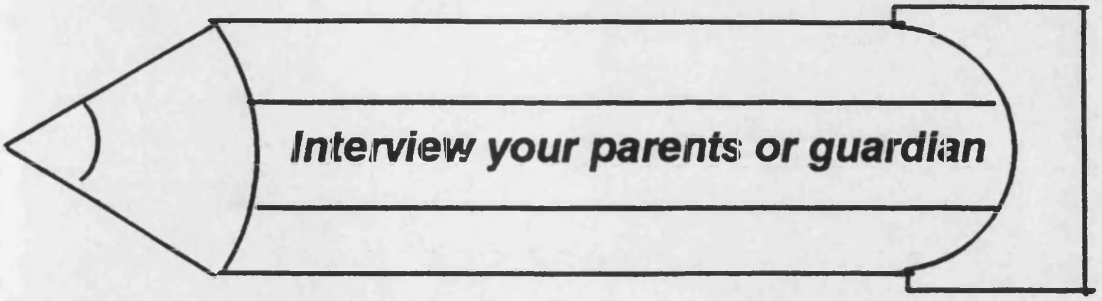


* Be cautious of exhaustion or medical problems
* Be aware of extreme heat,cold,or air pollution
* Be cautious and go slow after illness or injury
* Monitor your heart rate and respiration
* Listen to your body signals
* Set appropriate goals
* Drink plenty of fluids

* * * * * * * * * * * * * * * * * * * *

* Write 5 different games or activities that improve cardiovascular fitness, that are game or sport oriented.

#	Activity	Game
1		
2		
3		
4		
5		



Who you are interviewing ?

Male ☐ Female ☐

1. What do you think is the greatest benefit of exercise ?

2. Do you take part in any regular physical activity ?

3. comments:

Appendix (F)

CARDIOVASCULAR FITNESS

Physiological changes due to exercise:

* **Lower heart rate at rest and at moderate level of exercise.**
* **Greater maximal exercise capacity.**
* **Greater heart function.**
* **Increased breathing capacity.**
* **Improved muscular endurance and body composition.**
* **Improved lipid profile.**

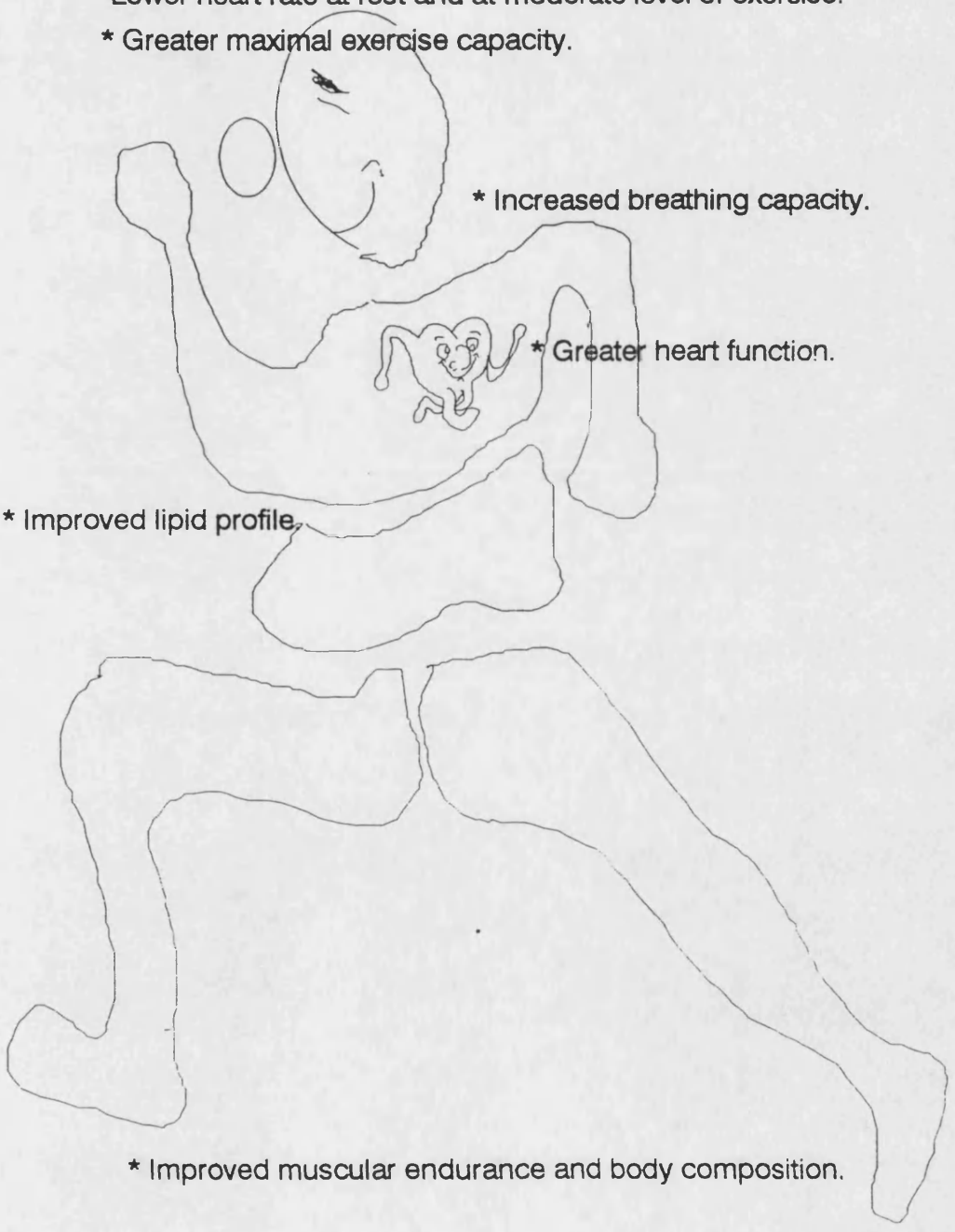
* * * *

ACTIVITY:

After a five minute warm-up have the students break up into reasonably sized groups for the space. The students will engage in one activity from each list of games related to cardiovascular fitness activities.

Physiological changes due to exercise:

* Lower heart rate at rest and at moderate level of exercise.
* Greater maximal exercise capacity.



* Increased breathing capacity.
* Greater heart function.
* Improved lipid profile.
* Improved muscular endurance and body composition.

FLEXIBILITY

Definition: "The ability to move a body joint and the corresponding muscle groups through the full range of motion without undue strain." (AAHPERD, PHYSICAL BEST, 1989)

The safety rules of stretching exercises

* **ALWAYS warm-up before starting any stretching activity.**
* **Do each exercise slowly and smoothly without bouncing.**
* **Stretch until you feel slight to moderate discomfort (NOT PAIN) , don't overstretch.**
* **Hold stretch for 10 seconds or more.**
* **Stretch during cool-down.**

ACTIVITY:

Have the students warm-up for around five minutes. The teacher will blow a whistle and the students will proceed to walk or jog around the class area. When the teacher blows the whistle again the students will stop moving about and do a stretching exercise.
Arm circles - across body / whistle - jog / whistle - hamsrting stretch / whistle - jog / whistle- armcircles backward / whistle - jog / whistle lower back and hip stretch / whistle- jog / whistle side-stretch / whistle - jog / whistle side stretch

* * * *

Have students look for and bring to class pictures of various stretches and examples of flexibility from magazines, put the pictures on a poster board.

Flexibility

"The ability to move a body joint and the corresponding muscle groups through the full range of motion without undue strain."

* * * * * * * * * * * * * * * * * * * *

Look for,

pictures of various streching exercise,and present them in

a collage.

FLEXIBILITY

Benefits of flexibility:

* Allows the body to move safely without injury to joints or connective tissues when participating in sport.
* Prevents injuries to the lower back and avoids back pain later in life.

* * * *

ACTIVITY:

Have the students warm-up for five minutes. Divide the group into pairs. The students will begin to jog around the class area, at the sound of the teachers whistle the students will stop and one student of the pair will choose a stretch and the other will do it with him; at the whistle the students will resume jogging or walking and at the whistle the other student will pick the stretch to be done; continue this way until all the stretches have been done twice. The teacher should also try to stay in constant motion and offer assistance where needed.

* * * *

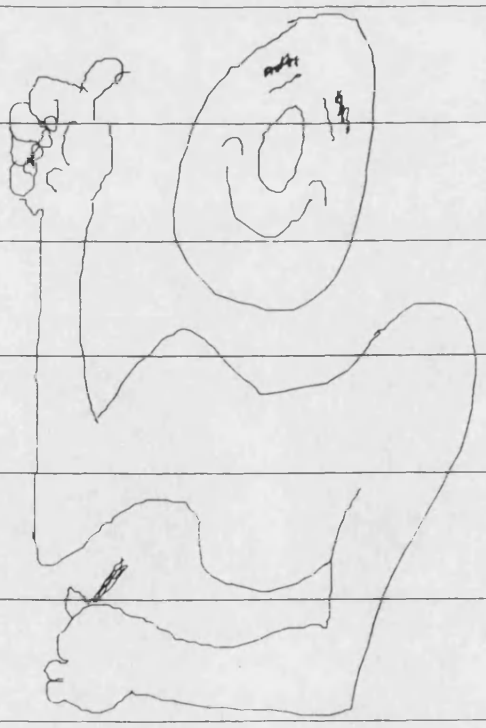
Each student should write ten stretching exercises and the area of benefit

The benefits of flexibility :

* Allows the body to move safely without injury to joints or connective tissues when participating in sport.

* Prevents injuries to the lower back and avoids back pain later in life.

* Write 10 Stretching exercisies and state the muscles and joints being used.

#	Streching exercise	Muscles & Joints
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

FLEXIBILITY

The safety rules of stretching exercises

* **ALWAYS warm-up before starting any stretching activity.**
* **Do each exercise slowly and smoothly without bouncing.**
* **Stretch until you feel slight to moderate discomfort (NOT PAIN) , don't overstretch.**
* **Hold stretch for ten seconds or more.**
* **Stretch during cool-down.**

* * * *

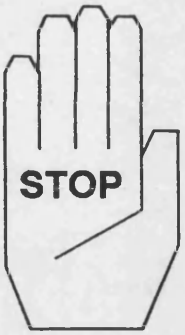
ACTIVITY:

Have the students warm-up for five minutes. Have the students pair off. The students will move about their activity area, at the whistle the teacher will call out the stretch to be performed, there should be a stretch for each area of the body; neck, shoulder, waist, lower back, thigh, hamstring, ect. At the whistle the students will resume motion, do each stretch twice.

* * * *

* For the next lesson ask the students to write out ten stretches that are aimed at reducing injury during sport, as well as what muscles are effected by each stretch?

The safety rules for stretching exercises :



* ALWAYS warm - up before starting any stretching activity.
* DO each exercise slowly and smoothly without bouncing.
* STRETCH until you feel slight to moderate discomfort (NOT PAIN), don't overstretch.
* HOLD stretching for 10 seconds or more .
* STRETCH during cool - down.

* * * * * * * * * * * * * * * * * * * *

* Write out 10 stretches which help to minimize risk of various various sports injuries; indicate the sport for which the stretch. is intended.

#	Stretching exercises	Sports
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Appendix (F)

FLEXIBILITY

Physiological changes:

*** Increase in range of movement in the joint, decreases the possibility of injury during exercise.**
*** Increases the tolerance and efficiency of the individual during physical work-out.**
*** The individual is less sore after physical exertion.**

* * * *

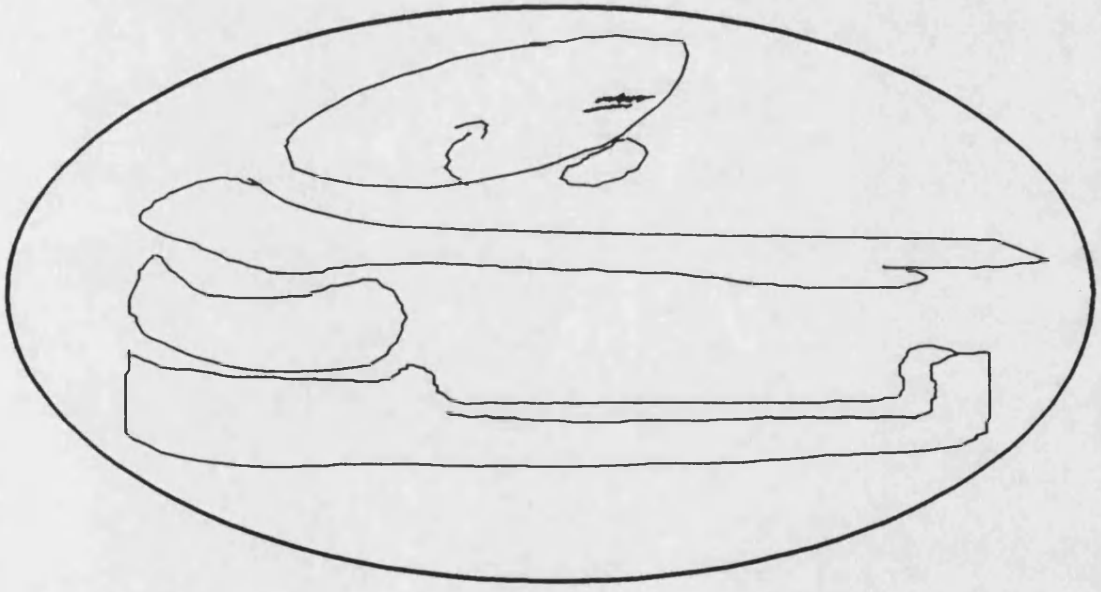
ACTIVITY:

Have the students warm-up for five minutes. The teacher will call out a students name, the student will run to the front of the class and demonstrate a stretch and it's usefulness in sport, then the entire class, including the teacher, will do that stretch. Upon completion the group will resume motion until the teacher calls out another name, continue this way until there has been a wide range of stretches demonstrated.

Physiological changes due to stretching exercises:

* Increases range of movement in the joint, decreases the possibility of injury during exercise.

* Increases the tolerence and efficiency of the individual during physical workout .



* The individual is less sore after physical exertion.

MUSCULAR STRENGTH AND ENDURANCE

DEFINITION: " Muscular strength is the capacity of the muscle to force against a resistance once. Muscular endurance is the ability of the muscle to exert force repeatedly or to hold a fixed or static contraction over a period of time." (Getchell, 1992, Physical Fitness A Way of Life,4th ed)

* * * *

The safety rules:

* **Warm-up before your work-out.**
* **Use proper lifting techniques.**
* **Exercise all major muscle groups for balanced development.**
* **DO NOT hold your breath as you lift.**

ACTIVITY:

Have the students warm-up for five minutes. The students will work in pairs. At the teachers instruction the students will perform various exercises of strength and endurance. After each exercise ask the students to identify if the activity was for strength or endurance.

Various exercises which could be used:

* Bent knee sit-up (30-45 seconds).
* Students will try to lift his mate onto his back, being sure to keep his knees bent and lifting with his thighs and NOT his back.
* Push-ups (30-45 seconds).
* Push your partner away; Have one student lay flat on his back with his legs extended outward, the other student will lay onto the extended legs and the bottom man will try and push upward with his legs.
* Elbow to knee curl (30-45 seconds).
* Standing long jump.

* * * *

Give the students a hand out of various activities. Have them write if it is a strength or an endurance activity and which muscle group is being used.

Muscular strength and endurance

"Muscular strength is the capacity of the muscle to exert a force against a resistance once. Muscular endurance is the ability of the muscle to exert force repeatedly or to hold a fixed or static contraction over a period of time."

* *

* Tick whether the activity is a strength exercise or endurance exercise.

Activity	Strength	Endurance
Broad jump		
10 pull - ups		
Softball throw		
20 sit - ups		
Hammer throw		
10 push - ups		
Shot Put		
Vertical jump		
Discus throw		
High jump		
Rock climbing		
Weight lifting		
Weight training		

MUSCULAR STRENGTH AND ENDURANCE

The benefits of strength and endurance:

* **Increase muscle mass.**
* **Increase strength.**
* **Increase potential for power.**
* **Increase muscular endurance.**
* **Prevents injury.**
* **Improves physical endurance.**

* * * *

ACTIVITY:

Have students warm-up for five minutes. Divide the group into pairs, set up 12 different exercise stations around the activity area. Each station will have an exercise listed that the students will do for 30-45 seconds, they will write on their sheet whether it was a strength or endurance exercise. The teacher circulates from station to station helping students as well as performing some of the exercises.

* * * *

Have the students write ten strength exercises that are not game oriented for the next class.

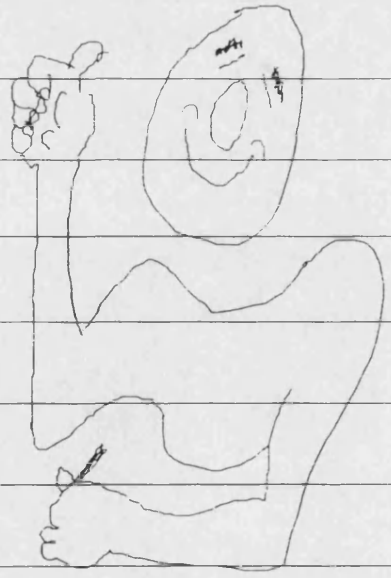
The benefits of Muscular Strength & Endurance

* Increase muscle mass.
* Increase strength.
* Increase potential for power.
* Increase muscular endurance.
* Prevents injury .
* Improves physical endurance.

* * * * * * * * * * * * * * * * * * *

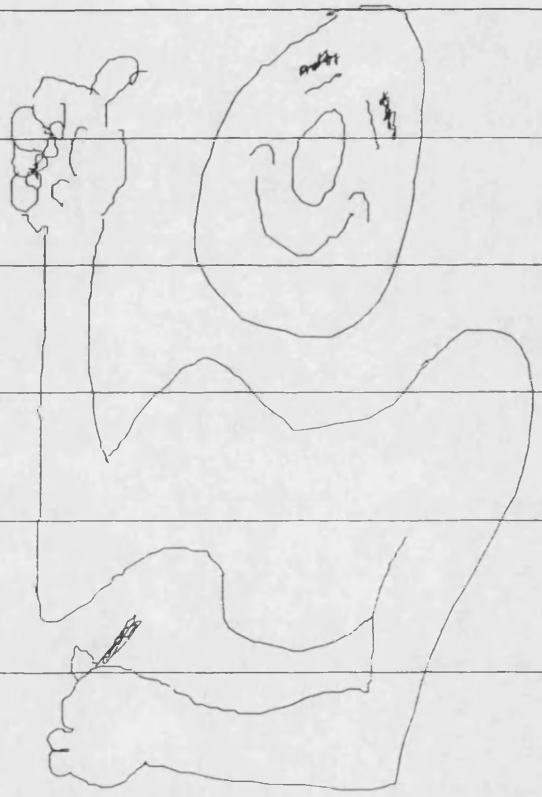
* Write down the name of the exercise at each station and tick whether the exercise is for strength or endurance.

#	Station	Strength	Endurance
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			



* Write 10 different exercises that improve strength or endurance, that are not game oriented.

#	***Exercises***
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	



Appendix (F)

MUSCULAR STRENGTH AND ENDURANCE

The safety rules:

* **Warm-up before your work-out.**
* **Use proper lifting techniques.**
* **Exercise all major muscle groups for balanced development.**
* **DO NOT hold your breath as you lift.**

* * * *

ACTIVITY:

Have the students warm-up for five minutes. Divide the group into pairs. Have them spread out in the activity area and perform each of the ten strength activities that they wrote for their assignment. The teacher will go around the group to comment on students progress.

* * * *

* Develop ten strength exercises that are game oriented and bring them to the next lesson.

Be aware of
INJURY

The safety rules of strength exercise

* Warm - up before your workout.
* Use proper lifting techniques.
* Exercise all major muscle groups for balanced development.
* DO NOT hold your breth as you lift.

* * * * * * * * * * * * * * * * * * *

* Write 10 different games or exercises that improve strength or endurance that are game or sport oriented.

#	Activity	Game
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Appendix (F)

MUSCULAR STRENGTH AND ENDURANCE

Physiological changes:

*** Strength training increases muscle tissue and helps decrease body fat.**
*** A program of exercise directed at strengthening and relaxing the muscles of the lower back region can do much to prevent or rehabilitate lower back problems.**
*** Strength training programs that are not supplemented with cardiorespiratory training are not adequate for developing and maintaining a good level of fitness for the heart, lungs, and blood vessels.**

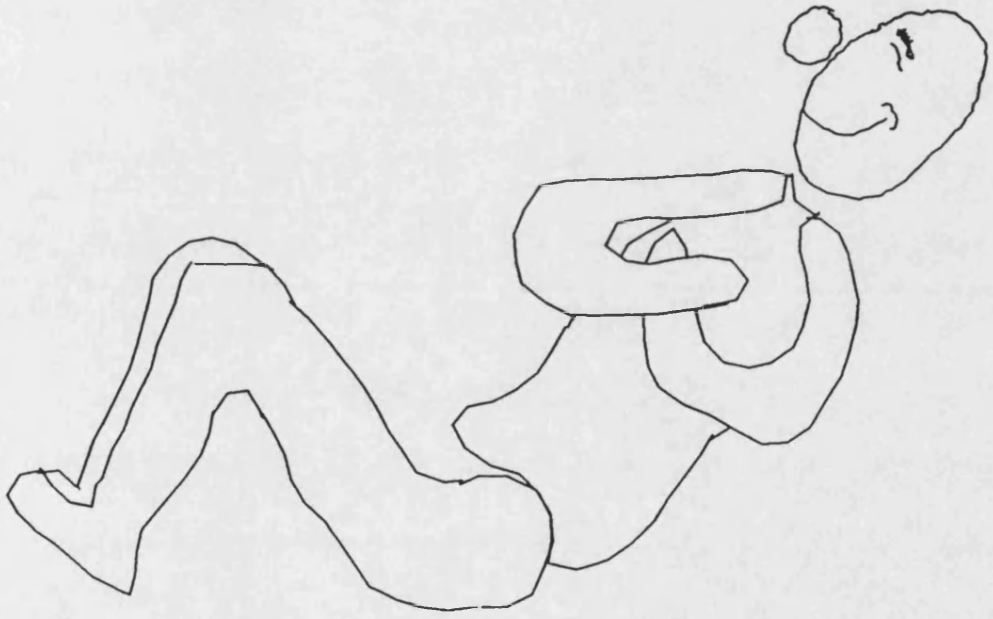
* * * *

ACTIVITY:

Have the students warm-up for five minutes. One at a time have the students lead the class with a strength exercise that they had written on their sheet.

Physiological changes due to strength exercises

* Strength training increases muscle tissue and helps decrease body fat.



* A program of exercise directed at strengthening and relaxing the muscles of the lower back region can do much to prevent or rehabilitate lower back problems.

* A strength training program that is not supplemented with cardiorespiratory training is not adequate for developing and maintaining a good fitness level of the heart,lungs,and blood vessels.

BODY COMPOSITION

Definition: " Is the proportion of fat to lean tissue in the body. Bone, muscle, connective tissue, cartilage, skin and nerves are considered lean tissue. Body fat is divided into two basic categories; essential fat and storage fat." (Roberts, 1992 ,Health Wellness an Introductory Approach 2nd ed.)

* * * *

ACTIVITY:

Have the students warm-up for five minutes. Play music with various beats and have the students move to the beat in any fashion they wish. Discuss the difference of aerobic and anaerobic exercise and the source of energy for each.

* * * *

Ask the students to answer the following questions:

* What are the risks associated with obesity?
* What are the benefits of having a lean body?
* How would you exercise if you wanted to use up excess fat?

Body composition

" is the proportion of fat to lean tissue in the body. Bone,muscle,connective tissue,cartilage,skin and Nerves are considered lean tissue. Body fat is divided into two basic categories; essential fat and storage fat."

* * * * * * * * * * * * * * * * * * *

* Answer the following questions:

A. What are the risks associated with obesity ?

B. What are the benefits of having a lean body ?

C. How would you exercise if you wanted to use up excess fat ?

BODY COMPOSITION

The benefits of a lean body:

Obesity is a serious health problem that is associated with a number of diseases including; coronary heart disease, congestive heart failure, hypertension, atherosclerosis, diabetes, and some cancers. (Roberts, 1992 Health Wellness an Introductory Approach 2nd ed)

* * * *

ACTIVITY:

Have the students warm-up for five minutes. Divide the class into groups of three. Provide a long skipping rope and several heavy books per group. Have the students take turns at jumping rope for 1 minute. Ask them if they would need to work harder if they were heavier. Have each student take a turn at skipping rope while holding the heavy books, relate the books to excess weight. The students should be able to understand that excess fat like the books is useless and is an added burden to the body. Without the rope have the students jump vertically with the books for 30 seconds. Have the students bench step with and without the books, noticing the difference in energy expenditure.

* * * *

-Have every student write five activities that are aerobic and five activities that are anaerobic.

The benefits of a lean body

Obesity
is a serious health
problem that is associated
with a number of diseases including;
coronary heart disease,congestive heart
failure,hypertension,atherosclerosis,diabetes,and
some cancers

* * * * * * * * * * * * * * * * * * * *

* Write 10 different activities, 5 aerobic,
and 5 anaerobic.

#	Aerobic	Anaerobic
1		
2		
3		
4		
5		

BODY COMPOSITION

AEROBIC means "with oxygen" and refers to energy derived from the oxidation of carbohydrates and fats.

ANAEROBIC means "without oxygen" and refers to the output of energy for muscular contraction when the oxygen supply is insufficient.

* * * *

ACTIVITY:

Have the students warm-up for five minutes. Divide the students into four groups. One student from each group will lead the students. Using activities from the last lesson he will choose an aerobic activity to perform; the next activity should be anaerobic.

BODY COMPOSITION

* Food provides the body with energy, excess calories are stored as fat in the body.
* One pound of fat equals 3500 calories.
* Be aware of the calories you consume everyday, if uncertain, keep a food diary of the things you eat. Remember to write down **all foods eaten.**
* Be physically active to help maintain a healthy body.

* * * *

ACTIVITY:

Have the students warm-up for five minutes. Divide the students into groups of 4. Set a specific distance as one lap around the activity area. Have the group do various activities for the entire lap at the conclusion of all the activities ask the students which task burns the most calories.

* Walk around the area.
* Jog around the area
* Run as quickly as possible around the area.

If the distance is the same the energy expenditure will be the same, doing high intensity exercise will allow you to complete more laps and burn more calories , however for weight loss and healthful body maintenance, low to moderate intensity activity is what is required.

* * * *

Remind students to keep track of their activities in their logs

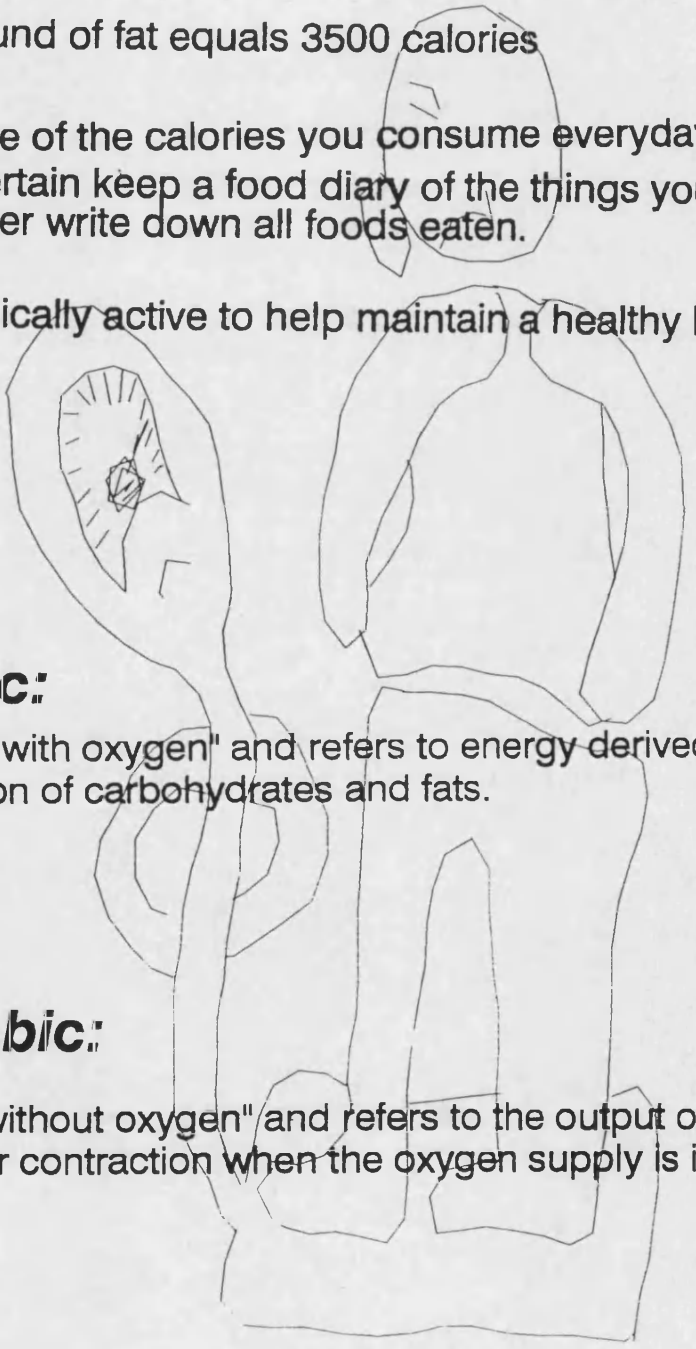
What you should know about calories!

* Food provides the body with energy, excess calories are stored as fat in the body .

* One pound of fat equals 3500 calories

* Be aware of the calories you consume everyday, if uncertain keep a food diary of the things you eat, remeber write down all foods eaten.

* Be physically active to help maintain a healthy body.



Aerobic:

* means "with oxygen" and refers to energy derived from the oxidation of carbohydrates and fats.

Anaerobic:

* means "without oxygen" and refers to the output of energy for muscular contraction when the oxygen supply is insufficient.

ماهى أهمية اللياقة البدنية؟

- يحتاج جسمك للأنشطة البدنية مثلما يحتاج للطعام والماء والهواء.
- الأنشطة البدنية تولد لديك احساس برضا النفسى.
- حتى تحصل على الحيوية والنشاط يجب أن تطلق الطاقة المخزونة داخل الجسم .
- الأنسان الذى يتمتع باللياقة البدنية قادر على أن يستغل كل قدراتة البدنية على أكمل وجه .
- ينمو جسمك ويزداد قوة عند ممارستك للأنشطة الرياضية.
- جسم الأنسان لا يستطيع أن يتحمل ساعات الخمول والجلوس المتواصلة طوال اليوم.

أختبار : الجرى او المشـى لمسـافة ميل الوقت بالدقيقة : والثانية

المحاولات

Comments	8	7	6	5	4	3	2	1	Name	#

أختبار قياس المرونة المسافة بالسنتيمتر

المحاولات

Comments	8	7	6	5	4	3	2	1	Name	#

Appendix (F)

أختبار الجلوس من وضع الرقود لمدة دقيقة واحدة

المحاولات

Comments	8	7	6	5	4	3	2	1	Name	#

أختبار قياس مكونات الجسم (العضد + الظهر) بالمليمتر

المحاولات

Comments	8	7	6	5	4	3	2	1	Name	#

أختبار اللياقة الصحية

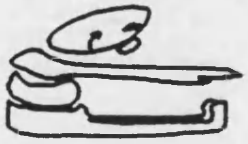
الأسم : _____

الفصل : _____ الطول : _____ سم

تاريخ الميلاد : _____ الوزن : _____ كجم

****

1. الجرى لمسافة ميل (1600 متر) الزمن : _____ د: ث



2. المرونة المسافة : _____ سم

3. الجلوس من وضع الرقود عددالمرات : _____

4. مكونات الجسم	1	2	3	الوسيط
1. العضد				
2. الظهر				
3. الساق				

الجرى او المشـى لمسـافة ميل الوقت بالدقيقة : والثانية

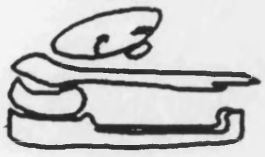
الزمن د: ث

1 2 3 4 5 6 7 8

المحاولات

الهدف							

ما تم تحقيقة							



قياس المرونة المسافة بالسنتيمتر

المسافة سم

52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10

1 2 3 4 5 6 7 8

المحاولات

						الهدف
						ما تم تحقيقة

الجلوس من وضع الرقود لمدة دقيقة واحدة

عدد مرات الجلوس

72 70 68 66 64 62 60 58 56 54 52 50 48 46 44 42 40 38 36 34 32 30

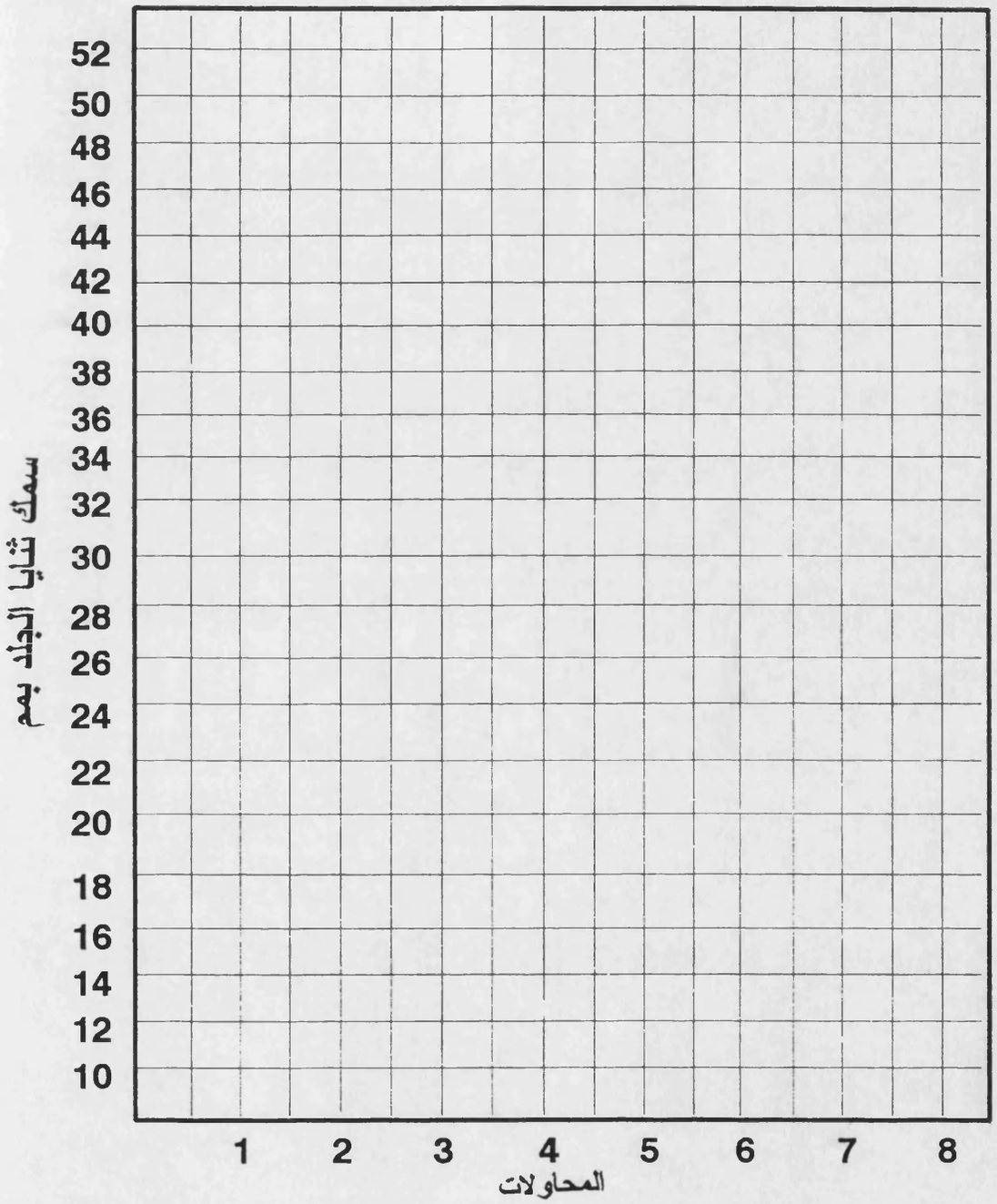
1 2 3 4 5 6 7 8

المحاولات

الهدف							

ما تم تحقيقة							

قياس مكونات الجسم (العضد + الظهر) بالمليمتر



						الهدف
						ما تم تحقيقة

Appendix (F)

عقد لمزاولة الأنشطة الرياضية!

أقر أنا الموقع أدناة بأن أزيد او (أحافظ) على معدل الأنشطة الرياضية التى أزاولها يوميا من معدلى الحالى التالى :

الوقت او المسافة		الوقت او المسافة
_____	الى	_____

وذلك خلال الثلاثة أسابيع القادمة.

وحتى أتمكن من تحقيق هدفى و هو قطع المسافة مابين مدينتي

_____ و _____

مدينة مدينة

سوف أطلب من _____ لمساعدتى فى تحقيق هذا الهدف .

و مسئولياتى هى :

1. زيادة الأنشطة الرياضية التى امارسها يوميا (مثل المشى ، الهرولة ، الجرى، السباحة ، ركوب الدرجات ، ... الخ ...) خلال أوقات فراغى .

2. أن أكافىء نفسى بـ _____ اذا لا حظت زيادة فى الوقت الذى أقضية فى ممارسة الأنشطة الرياضية او زيادة المسافة . و أن أمتنع عن هذة المكافأة اذا لم الاحظ اية تغير فى المسافة او الوقت.

3. وأن أقوم بتسجيل جميع الأنشطة الرياضية التى أقوم بها فى سجلى اليومى كل يوم .

و مسئوليات مساعدى هى :

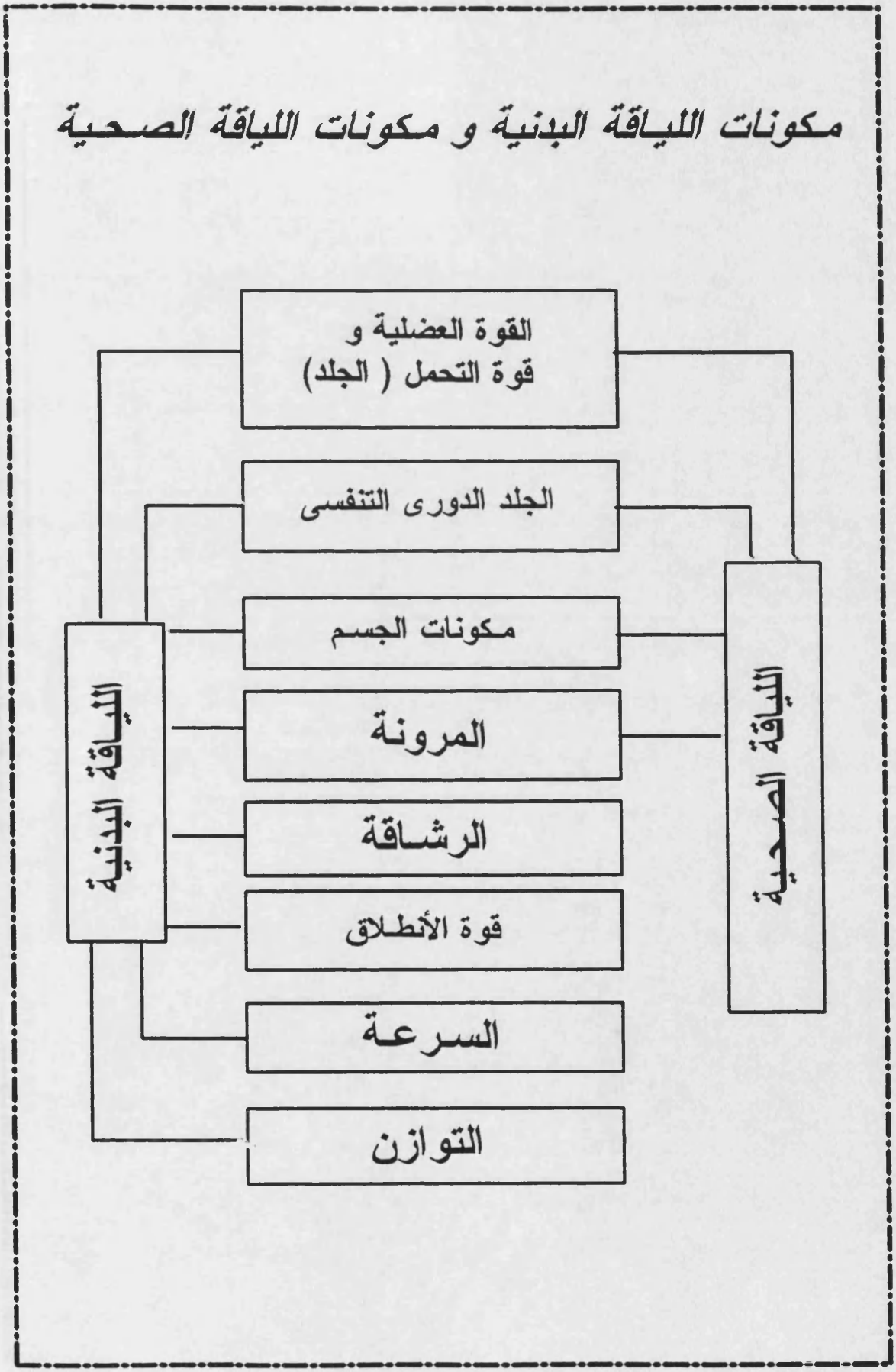
1. الأشتراك معى كلما أمكن فى ممارسة الأنشطة الرياضية ، وتشجيعى بأن أمارس الرياضة بنتظام .

2. ومساعدتى فى مراجعة سجلى اليومى للأنشطة الرياضية .

	التوقيع	التاريخ
1. الطالب :	_____	_____
2. المساعد :	_____	_____
3. المدرس :	_____	_____

السجل اليومي للأنشطة الرياضية

التاريخ	نوع النشاط الرياضي؟	كم استغرق هذا النشاط من الوقت أو المسافة؟	ما الأستفادة من هذا النشاط؟	تعليقات
		الوقت او المسافة خلال الأسبوع -		
		الوقت او المسافة خلال الأسبوع -		


مكونات اللياقة البدنية و مكونات اللياقة الصحية
القوة العضلية و
قوة التحمل (الجلد)
الجلد الدورى التنفسى
مكونات الجسم
المرونة
الرشاقة
قوة الأنطلاق
السرعة
التوازن
اللياقة البدنية
اللياقة الصحية

بين من الأنشطة التالية أيهم يمكن تصنيفة للياقة الصحية وأيهم يتم تصنيفة للياقة البدنية.

النشاط	اللياقة الصحية	اللياقة البدنية	تعليقات
الجرى			
الوثب الطويل من الثبات			
20 متر جرى مكوكى			
الضغط 10 مرات			
المشى			
الجلوس الطويل مع لمس أصابع القدمين			
الوثب العامودى			
الشد للأعلى 5 مرات			
قذف الرجلين خلفا من وضع القرفصاء			
قياس مكونات الجسم			
50 ياردة عدو			
الوقوف على اليدين			
الجرى لمدة 12 دقيقة			
رمى الكرة الناعمة لأقصى مسافة			

*** حدة التمرين = (ماهى الحدة التى يجب أن أتمرن عليها ؟)**

220 – العمر = الحد الأقصى لعدد ضربات القلب
الحد الأقصى لعدد ضربات القلب – عدد ضربات القلب فى حالة الراحة = إحتياطى ضربات القلب
إحتياطى ضربات القلب x (70. او 60.) = ؟
؟ + عدد ضربات القلب فى حالة الراحة = الحدة المطلوبة لتمرين

* * * * * * * * * * * * * * * * *

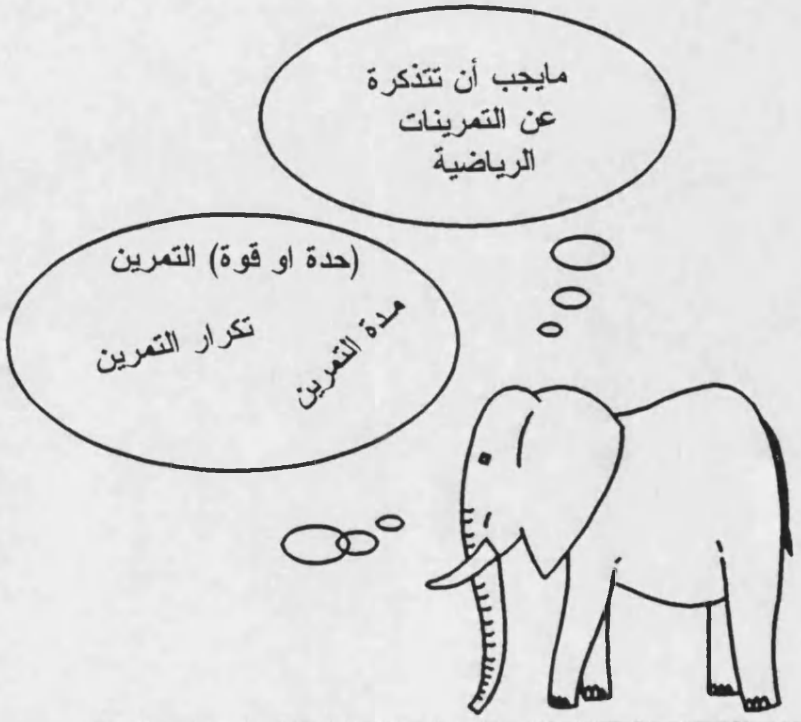
*** مدة التمرين = كم من الوقت أقضية فى التمرينات الرياضية؟**

مدة التمرين لها علاقة كبيرة بحدة التمرين حيث أن كلما زادة حدة التمرين قلت المدة التى تقضيها فى التمرين والعكس صحيح . و المعدل المطلوب للأستفادة من اى نشاط رياضى هو من 20 –30 دقيقة للأنشطة متوسطة الحدة.

* * * * * * * * * * * * * * * * *

*** تكرار التمرين = كم يوما فى الأسبوع يجب أن أمارس الأنشط الرياضية ؟**

اللياقة البدنية غير قابلة لتخزين وعلية فهى فى حاجة دائمة للأنشطة الرياضية حتى تحافظ عليها ، و للمحافظة على اللياقة البدنية يجب أن تمارس الأنشطة الرياضية ، ثلاثه أيام فى الأسبوع على الأقل ولمدة تتراوح من 20 – 30 دقيقة من كل يوم.



عدد ضربات القلب أثناء الراحة =

* قم بحساب الحدة المطلوبة للتمرين وذلك بحدة أقصاها 75٪ وأدناها 60٪ من إحتياطى ضربات القلبك .

الحدة المطلوبة بمعدل ( ) ٪ = ضربة بالدقيقة

* قم بتسجيل عدد ضربات القلبك خلال الأنشطة التالية. و كتب أسم النشاط الذى تقوم به ، وإذا ما تمكنت من الوصول الى الحدة المطلوبة أم لا .

النشاط	معدل القلب	تعليقات

الجلد الدورى التنفسى او (قوة التحمل الجهاز الدورى والتنفسى)

[هى قدرة قلبك والأوعية الدموية والرئتين على العمل بأفضل صورة ممكنة خلال الأنشطة الرياضية ، و المحافظة على حدة العمل البدنى لأطول فترة ممكنة مثل (الجرى ، السباحة ، ركوب الدراجات ، ... الخ ...)]

القراءة	معدل القلب	ماهو نوع النشاط؟
القراءة الأولى		
القراءة الثانية		
القراءة الثالثة		
القراءة الرابعة		
القراءة الخامسة		
القراءة السادسة		

* لماذا تختلف معدل ضربات القلب من طالب الى أخر؟

* لماذا تختلف معدل ضربات القلب من نشاط الى آخر ؟

* قم بتسجيل معدل ضربات قلبك خلال باقى اليوم؟

القراءة	معدل القلب	الوقت	ماذا كنت تعمل؟
القراءة الأولى			
القراءة الثانية			
القراءة الثالثة			
القراءة الرابعة			
القراءة الخامسة			
القراءة السادسة			
القراءة السابعة			

أهمية الجلد الدورى التنفسى او (قوة التحمل لجهاز الدورى والتنفسى)

* تكون اكثر نشاطا وحيوية.
* الوقاية من مرض السمنة.
* الوقاية من أمراض القلب و الأوعية الدموية.
* تزودك بقوام رشيق وتعطيك احساس برضا النفسى.
* القدرة على مقاومة التعب و الأجهاد.

القراءة	معدل القلب	ماذا كنت تعمل؟	تعليقات
القراءة الأولى			
القراءة الثانية			
القراءة الثالثة			
القراءة الرابعة			
القراءة الخامسة			
القراءة السادسة			

* معدل ضربات القلب لثلاثة أشخاص بالغين؟

الشخص	الجنس	السن	معدل القلب	تعليقات
الأول				
الثانى				
الثالث				

أكتب 10 تمارين رياضية مختلفة والتى من شأنها أن تنمى الجلد الدورى التنفسى او (قوة تحمل الجهاز الدورى التنفسى) على أن لا تكون هذة التمارين من الألعاب الرياضية المعروفة (كرة القدم ، كرة السلة، ... الخ...)

#	التمرين
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

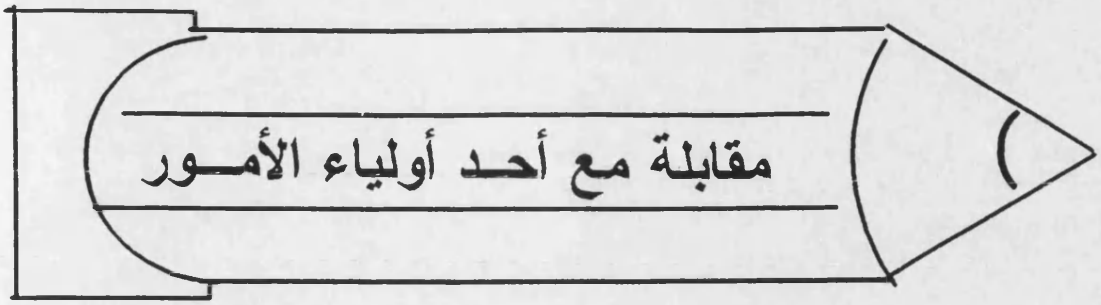
شروط الأمن و السلامة التى يجب أتباعها
عند ممارسة تمرينات تنمية الجلد الدورى التنفسى
او (قوة تحمل الجهاز الدورى والتنفسى)

* كن على حذر من الأجهاد او اى عارض مرضى قبل ممارستك الأنشطة الرياضية.
* كن على حذر من درجات الحرارة العالية ، البرودة الشديدة ، التلوث الجوى .
* أبداء التمرينات الرياضية بحدة (شدة) منخفظة خصوصا بعد المرض او خلال فترة النقاهة من اية اصابة جسمية.
* أنتبة الى معدل ضربات القلب وسرعة التنفس.
* لاحظ علامات الأجهاد المختلفة أثناء الأنشطة الرياضية.
* ضع أهداف مناسبة ممكن تحقيقها.
* تناول كميات وافية من السوائل.

---

* أكتب 5 من الألعاب او الأنشطة الرياضية التى من شأنها أن تنمى الجلد الدورى التنفسى او (قوة تحمل الجهاز الدورى التنفسى) والتى لها علاقة مباشرة بالألعاب الرياضية المختلفة.

#	النشـــاط	اللعبـة
1		
2		
3		
4		
5		



مقابلة مع أحـد أولياء الأمــور

1. من قابلت ؟

ذكـر انثى

☐ ☐

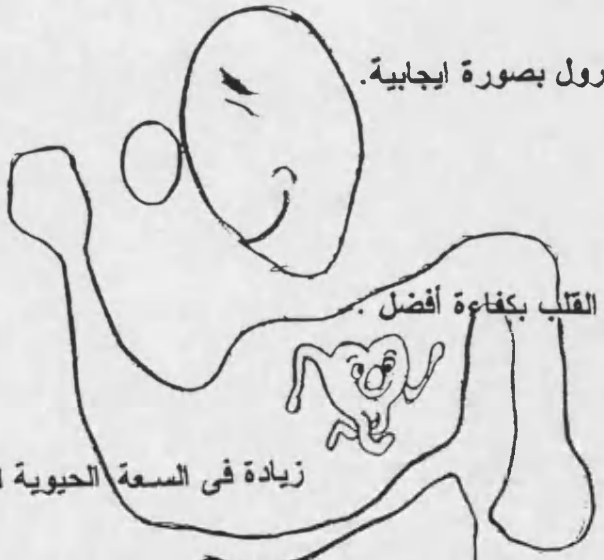
2. ماهى أهم فائدة يجنيها الأنسـان من ممارسـة الأنشـطة الرياضية؟

3. هل تمارس اى من الأنشـطة الرياضية بصورة مسـتمرة (على الدوام) ؟

4. تعليقات؟

التغيرات الفسيولوجية نتيجة تمارين الجلد الدورى التنفسى .

تأثير على معدلات الكلسترول بصورة ايجابية.



يعمل القلب بكفاءة أفضل .

زيادة فى السعة الحيوية للرئتين.

زيادة الجلد العضلى (قوة تحمل العضلات) ، وتأثير بشكل ايجابى على مكونات الجسم المختلفة.

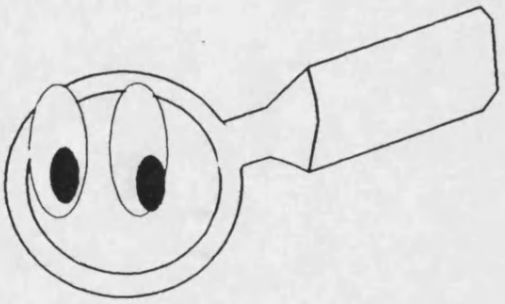
القدرة على تحمل العمل العضلى لدرجات حدة عالية .

معدل ضربات القلب تكون أقل أثناء الراحة او فى حالات الأنشطة متوسطة الحدة.

المـرونة

هى القدرة على تحريك المفاصل
و العضلات و ا لأربطة خلال المدى الحركى
لهذة المفاصل بدون الشـعور بألم

* * * * * * * * * * * * * * * * * * * *



ابحث عن **صور لتمارين مرونـة** مختلفة من المجلات
او الصحف المختلفة و ضعها فى مجلة حائط.

فوائد تمارين المرونة !

القدرة على الحركة بنون الخوف من حدوث إصابات للأربطة او العضلات او المفاصل خلال الأنشطة الرياضية المختلفة.

الوقاية من إصابات ألام الظهر و التى غالبا ما يشتكى منها كبار السن.

أكتب 10 من تمرينات المرونة المختلفة مع ذكر العضلات و المفاصل التى تستخدم فى هذة التمرينات.

#	تمرينات المرونة	العضلات و المفاصل
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

شروط الأمن و السلامة الواجب إتباعها عند عمل تمرينات المرونة.

- قم بأداء تمرينات الأحماء قبل اية أنشطة بدنية ، على أن تشمل عملية الأحماء تمرينات المرونة وبصورة دائمة.
- قم بأداء تمرين المرونة بصورة بطيئة وبزيادة المدى الحركى للمفصل بدون محاولة مدة أكثر من مداة الطبيعى .
- يجب مد المفصل فى تمرينات المرونة حتى الأحساس بشىء من الضيق او عدم الأرتياح الخفيف و لكن دون أن تتألم.
- أذا توصلت الى مرحلة الضيق او عدم الأرتياح حاول الأستمرار او (الوقوف) عند هذة المرحلة لمدة لا تقل عن 10 ثوان .
- يجب أن تعمل تمرينات المرونة بعد الأنتهاء من التمرينات او الأنشطة البدنية المختلفة و قبل الأغتسال .

* * * * * * * * * * * * * * * * * * * *

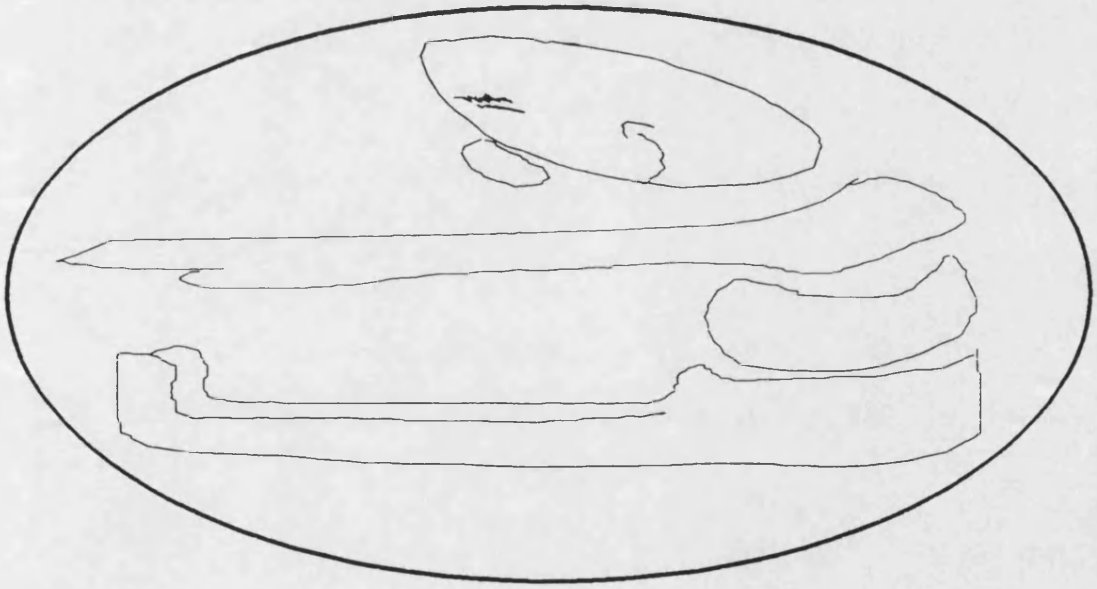
أكتب 10 من تمرينات المرونة المختلفة والتى من شأنها أن تقلل من فرص الإصابات خلال الألعاب الرياضية المختلفة ، مع ذكر كل تمرين و أية رياضة يمكن إستخدام هذا التمرين .

#	تمرين المرونة	الرياضة
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

التغيرات الفسيولوجية نتيجة تمرينات المرونة:

- زيادة القدرة على تحمل العضلات للجهد المبذول ، وزيادة فاعلية هذة العضلات خلال اية نشاط رياضى يذكر.

- زيادة المدى الحركى للمفصل وتقليل فرص الأصابات خلال ممارسة الأنشطة الرياضية المختلفة.



- عدم الشعور بآلم بعد مزاولة الأنشطة الرياضية المختلفة.

القوة العضلية و الجلد العضلى او (التحمل العضلى)

القوة العضلية

هى قدرة العضلة على بذل أقصى قوة ممكنة لمجابهة أو مقاومة قوة خارجية ولمرة واحدة.

الجلد العضلى او (التحمل العضلى)

هو قدرة العضلات على بذل قوة بصورة متكررة أو القدرة على الحفاظ على إنقباض العضلة لفترة زمنية محددة.

* بين أين من هذة الأنشطة تمثل القوة العضلية ، و أيهم يمثل الجلد العضلى او (التحمل العضلى)

النشـاط	القوة العضلية	. العضلى
الوثب الطويل من الثبات		
الشد لأعلى 10 مرات		
رمى الكرة الناعمة		
الجلوس من وضع الرقود 20 مرة		
قذف المطرقة		
ضغط الصدر 10 مرات		
قذف الجلة		
الوثب العامودى		
قذف القرص		
الوثب العالى		
تسلق الصخور		
رفع الأثقال		
تمرين الحديد		

فوائد القوة العضلية او (الجلد العضلى)

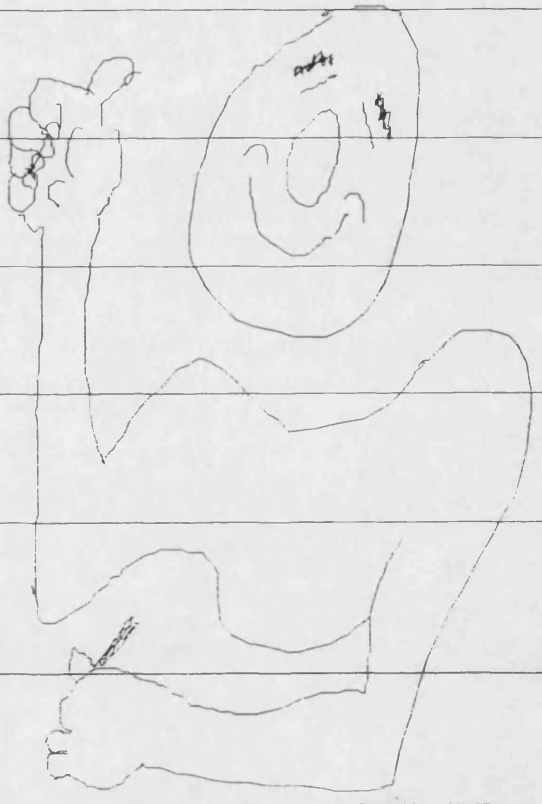
* زيادة حجم العضلات.
* زيادة فى قوة العضلات.
* زيادة فى قوة الأنطلاق.
* زيادة فى قوة التحمل العضلى او (الجلد العضلى)
* الوقاية من الأصابات المختلفة للعضلات.
* تنمية قوة التحمل للأنشطة الرياضية بصورة عامة.

* * * * * * * * * * * * * * * * * * *

أكتب أسم التمرين فى كل محطة من محطات التمارين المختلفة
وبين ماأذا كان هذا التمرين هو تمرين قوة عضلية او تمرين جلد عضلى (قوة تحمل عضلى)

#	المحطة	تحمل عضلى	قوة عضلية
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

أكتب 10 تمرينات مختلفة من شأنها أن تنمى القوة العضلية او الجلد العضلى (قوة التحمل) على أن لا تكون لها علاقة بأى من الألعاب الرياضية المختلفة مثل (كرة القدم ، كرة السلة ، ... الخ ...)

#	التمرين
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

كن على حذر
من الأصابات

القواعد والتعليمات التى يجب أتباعها لتلافى الأصابة خلال تمرينات القوة العضلية

* يجب أن تقوم بعمل تمرينات الأحماء قبل كل نشاط رياضى.
* عند حمل او رفع اية من الأثقال او الأوزان يجب استخدام الطريقة الصحيحة لعملية الحمل.
* يجب أن تشارك جميع عضلات الجسم المختلفة فى التمرينات الرياضية ، حتى تحصل على التوازن المطلوب لنمو.
* يجب ان تطلق الزفير خلال عملية الحمل او الرفع (لا تحبس التنفس) .

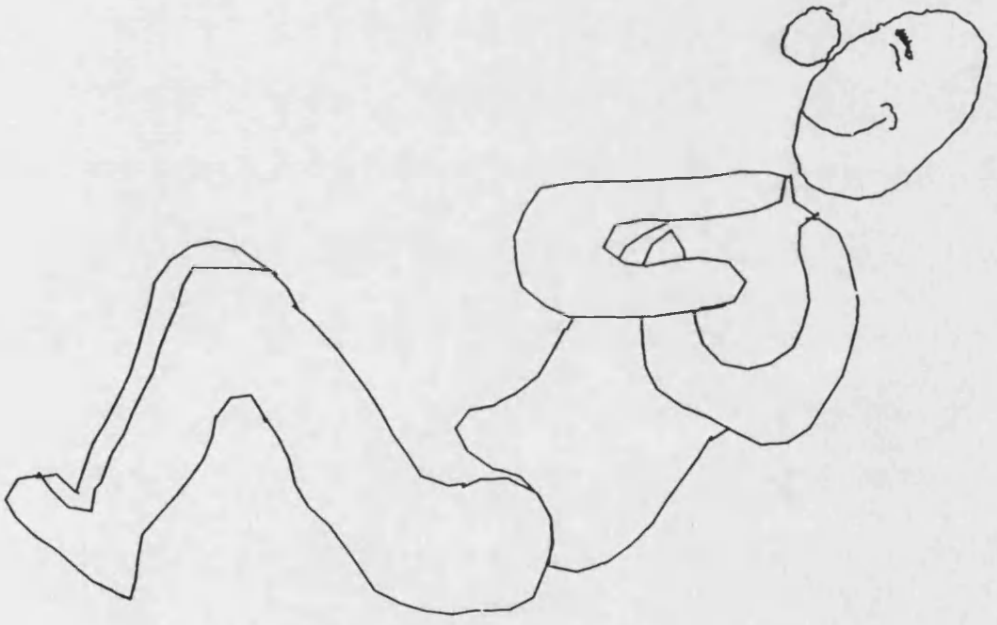
* * * * * * * * * * * * * * * * * * *

أكتب 10 تمرينات مختلفة او ألعاب رياضية و التى من شأنها أن تنمى القوة العضلية او قوة التحمل العضلى والتى لها علاقة مباشرة بالألعاب الرياضية المختلفة.

#	النشاط	الرياضة
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

التغيرات الفسيولوجية نتيجة تمرينات القوة العضلية :

- تمرينات القوة المختلفة من شأنها أن تزيد من حجم العضلات و تقلل نسبة الدهون فى الجسم.



- إذا شمل البرنامج الرياضى المعد بعض التمرينات المخصصة لتقوية وإسترخاء عضلات الظهر المختلفة و التى من شأنها أن تقى من او تعمل على التخلص من آلام الظهر المختلفة او التعجيل فى الشفاء.

- يجب أن يواكب او يرافق تمرينات القوة او البرنامج المخصص لتنمية القوة العضلية ، بعض التمرينات التى من شأنها أن تساعد على تنمية الجلد الدورى والتنفسى وذلك للحصول على أكبر فائدة ممكنة من هذة التمرينات .

مكونات الجسم

* يتكون جسم الأنسان من أنسجة ودهون (شحم) .
و تنقسم الأنسجة المختلفة الى عضلات ، عظام ، أربطة ، أعصاب ، و جلد . أما الدهون فتنقسم الى قسمين هما :
(ا) الدهون الأساسية . (ب) ودهون مخزنة.

* * * * * * * * * * * * * * * * * * *

أجب على الأسئلة التالية :

1. ماهى الأضرار او الأخطار الناتجة عن السمنة؟

2. ماهى فوائد الناتجة من الحصول على القوام الرشيق ؟

3. ماهى التمرينات الرياضية المناسبة لتخلص من الدهون المخزونة فى الجسم ؟

السمنة

وهى أحد أسباب الأمراض التالية أمراض القلب المختافة ، ضغط الدم ، تصلب الشرايين و الأوعية الدموية ، السكرى ، وبعض من أنواع السرطان .

* * * * * * * * * * * * * * * * * * * *

أكتب 10 من التنرينات المختلفة 5 تمرينات هوائية ، و 5 اللاهوائية

#	تمرينات هوائية	تمرينات اللاهوائية
1		
2		
3		
4		
5		

ما هى السعرات الحرارية؟

* الطعام يمد الأنسان بالطاقة الازمه ، وما لا يستغل من هذة الطاقة يخزن فى الجسم على شكل دهون (شحم) .

* رطل واحد (0.4536 كجم) من الدهون = 3500 سعر حرارى .

* كن على علم بعدد السعرات الحرارية التى تقوم بتناولها يوميا . وإذا كنت غير متأكد قم بتسجيل كل ماتتناولة يوميا فى سجل خاص يومى .

* مارس الأنشطة الرياضية المختلفة بصورة منتظمة حتى تحصل على القوام الرشيق وتتمتع بالحيوية والنشاط.

التمرينات الهوائية :

(هى الطاقة المنطلقة لأنقباض العضلات المختلفة من أكسدة الدهون والكربوهيدرات بوجود كمية وافية من الأكسجين)

التمرينات اللاهوائية :

(هى الطاقة المنطلقة لأنقباض العضلات المختلفة بدون وجود الأكسجين الكافى لأكسدة الدهون)

Appendix (G)

UK Students Interviews:

UK Student Number One:

Q1: Explain your feeling toward physical education.

A: I hate it.

Q2: Why do you think you have this feeling toward physical education class?

A: I don't hate baseball or rugby, or something like that , but when it comes to running I don't like that, because I'm not very fit. PE is too much hard work for no reason.

Q3: Explain WHY? Can you give me an example?

A: There is nothing to it, there is no exam, if you pass or not will not help with your getting a job. You are better doing English or something else you're not good at and catch up.

Q4: What is your experience with physical education throughout your school years.

A: Boring.

*Q: How is it boring?

**A: Well first in the winter we do rugby and get muddy and like that and you get too hot and it gets on my nerves. It's always rugby or soccer in the winter you have no choice. I really don't like the running events. Athletics, cross country and tennis. If I play rugby I only run a little and then stop and take a break, it's not all running.*

Appendix (G)

Q5: Are your parents involved in any physical activity in their free time?

A: No, my dad can't because he had an accident. Before he used to play football but he was younger. My mum doesn't do anything, she even hates to watch it, it she likes Eastenders and things like that, not sports.

*What type?

*What do you think are the reasons for their (non) participation?

A: My dad can't and my mum doesn't like it, that's all.

Q6: Do you have a close friend that is involved in physical activity?

A: Yes, it's probably 50/50 of my friends play.

*What type?

A: Rugby mainly, outside school.

*What do you think are the reasons for their (non) participation?

A: They love doing it. We all like to play, if we could play rugby in PE tomorrow I'd bring my kit to play, if the PE teacher said we were doing athletics or baseball or something like that I wouldn't bring my kit, I'm not doing something I don't like.

Q7: Is there any other person that may effect your choices in physical activity?

A: No, nobody.

Q8: Could you think of anything that could make you interested in physical activity or sport?

A: There should be some goal or reward system at the end of it. It really could be anything.

* Could you give an example?

Appendix (G)

Q9: Do you think there are benefits of being physically active or having regular work-outs?

A: If you should be fit for your job then yes, but there is no need to go training everyday is there? There are a couple guys that I work with and they don't work out and they are strong and fit, they never run or anything. There are some people who just don't need to be active but they will still be very fit. I guess in the Olympics benefits of physical activity could be that you win, you can get satisfaction, but there is really nothing else.

*If yes, what are these benefits?

Q10: What are the reasons why you do (don't) take part in physical activity?

A: I don't like the bother. Like in the winter I'll play a game of rugby or in the summer I'll go swimming but it's for a laugh, I only mess around I'm not going to swim 20 laps or something. It's for fun, not fitness.

Q11: What could make you take part in regular physical activity?

A: I suppose if there is a massive dog chasing me that wants to bite me I may run fast; but other than that nothing could make me move from my chair.

Q12: Where do you get most of the information about physical activity or sports?

A: The PE teacher most likely.

Q13: What does this information address or talk about?

A: It could be stuff like how to train safely and warm-up, stuff like that.

Q14: What do you think of the programme we presented?

A: I could not see why it was necessary.

Appendix (G)

*How could we make it better?

A: For me it wasn't good and it wasn't bad, it didn't matter.

UK Student Number Two:

Q1: Explain your feeling toward physical education.

A: I find PE is a good way to get rid of frustrations from school if you have any, and it's a good way to keep fit.

Q2: Why do you think you have this feeling toward physical education class?

A: Because now we are learning a lot about what frustration is in this school.By doing a work out you feel a lot better, school work and just school itself can be frustrating.

Q3: Explain WHY? Can you give me an example?

A: Like I said it helps a lot to relieve tension, like if you don't do well in a lesson you can come to PE and show what you can do, what you're good at.

Q4: What is your experience with physical education throughout your school years.

A: I don't remember my early PE lesson, I think it got better when I grew up. When we were at primary school we did nothing really, now we learn better stuff and better things like unohock, and sports. PE can be good and bad it varies. Some lessons it's the same old thing and you get bored. Sometimes it changes and we do something new, I like to have a choice.

Q5: Are our parents involved in any physical activity in their free time?

A: My dad used to play football and could have played professionally. My mum is a keep fit instructor, she does her class everyday for an hour and on

the weekend she does step aerobics. Now my dad does keep fit because he drives a lot and when he comes home he does step aerobics everyday.

*What type?

*What do you think are the reasons for their (non) participation?

A: My mum says she always enjoyed physical activity and she wanted a business of her own so she took up keep fit, she likes doing it and it brings in money. My dad is an engineer and he does it because the workout is the best way for him to be active.

Q6: Do you have a close friend that is involved in physical activity?

A: One of my friends likes to ride his bike for the health benefits he said. There are quite a few of my friends that are involved in a variety of activities and play football.

*What type?

A: Martial arts, swimming, jogging.

*What do you think are the reasons for their (non) participation?

A: They do it because it's fun, and to challenge each other on. Because we are different ages there is one who is a very, very small kid, and we see how we can do, and we feel it is good for us.

Q7: Is there any other person that may effect your choices in physical activity?

A: Just my friends, we like to play.

Q8: Could you think of anything that could make you interested in physical activity or sport?

A: I already do like physical activity.

* Could you give an example?

Appendix (G)

Q9: Do you think there are benefits of being physically active or having regular work-outs?

A: Yes there are a lot.

*If yes, what are these benefits?

A: When I do any training I feel great, really alive, ready to do anything. I feel really ready for anything. In general it's a way to keep fit and I enjoy it. The best thing to do is a physical activity that you enjoy because you work harder and you get more satisfaction in the end.

Q10: What are the reasons why you do (don't) take part in physical activity?

A: I've always been interested in it. I have been going to different clubs and I always like to do it. I find it interesting, it helps keep me strong and healthy.

Q11: What could make you take part in regular physical activity?

A: I'm always active, I love to move and compete as well as just have a great time.

Q12: Where do you get most of the information about physical activity or sports?

A: Actually from my mum because she does this stuff about the calf and the thigh and she shows me how to stretch, and how to do it right and have fun without getting hurt. My mum took all these courses (IEC) which is her instructor course, I ask her about stuff.

Q13: What does this information address or talk about?

A: Safety.

Q14: What do you think of the programme we presented?

A: Most of the boys didn't like it because they were doing sheets outside and all they wanted to do was an activity. I really didn't want to do it but I thought it was better to do it and learn something and then we can play.

*How could we make it better?

A: Ask the boys what they want to do. We really want to play unohock or rounders or basketball maybe tennis. There is something else too, you didn't make the girls class do the sheets, and they were able to run around and we had to learn this and that wasn't too good either.

Kuwaiti Boys Interviews:

Kuwaiti Student Number One:

Q1: Explain your feeling toward physical education.

A: I think it's a period of entertainment; it's time to have fun.

Q2: Why do you think you have this feeling toward physical education class?

A: Because I don't see anything to it.

Q3: Explain WHY? Can you give me an example?

A: The teacher will give us a ball and he will go. The boys who want to play do and those who want to sit will sit, there is nothing to it. We don't need anymore PE, the boys who don't participate now aren't going to do anything in more lessons, and you'll take time from other important subjects.

Appendix (G)

Q4: What is your experience with physical education throughout your school years.

A: For elementary, intermediate and secondary the teacher gives us the ball and he goes. I like secondary most because we have a gym and we are allowed to play volleyball because I don't like football.

Q5: Are your parents involved in any physical activity in their free time?

A: My father.

*What type?

A: He plays volleyball with his friends on Saturday.

*What do you think are the reasons for their (non) participation?

A: I think because he just want to get together with his friends and have fun. My mother doesn't do anything probably because of the other children.

Q6: Do you have a close friend that is involved in physical activity?

A: I have some friends that play sports, they play football in our neighborhood. I don't do too much sport because my uncle died from playing sports. He was playing football and got thirsty so he had a drink of water then he fell over and died, I don't get too tired when I do anything.

*What type?

*What do you think are the reasons for their (non) participation?

A: Because this is their hobby and they have fun and they like it.

Q7: Is there any other person that may effect your choices in physical activity?

A: I have one friend who if he asks I'll play with him a little.

Q8: Could you think of anything that could make you interested in physical activity or sport?

A: If I have nothing to do I might go and play. What will stop me is TV or if I have too much school work.

* Could you give an example?

Q9: Do you think there are benefits of being physically active or having regular work-outs?

A: Yes I think there is some benefit in physical activity.

*If yes, what are these benefits?

A: It will give you the good looking body and the person will be able to do a lot of things. It will extend his life and give him good health. Activity can have a positive influence on the students achievements, but if he doesn't organise his time well it will affect him negatively, and it will destroy his grades.

Q10: What are the reasons why you do (don't) take part in physical activity?

A: I think my main obstacle is my weight, if I weren't this weight I might be more willing to take part. I think the teacher should have to help boys like me to lose weight. I also and very smart, the students on the lower 10% of the class are more involved in physical activity and sport. They are not organised and they spend all their time playing. The top 10 % of the students are organised and are more concerned with their school work, they don't let sport take their time. If they are involved in it they are reasonable and do it only during PE.

Appendix (G)

Q11: What could make you take part in regular physical activity?

A: Well if the teacher didn't allow us to sit in PE then I'd probably be a lot more active, if all my friends are sitting down in PE I am going to sit with them.

Q12: Where do you get most of the information about physical activity or sports?

A: TV and magazines.

Q13: What does this information address or talk about?

A: The benefits of exercise and physical activity and some of the harmful things that come if you are not active.

Q14: What do you think of the programme we presented?

A: It was good it taught us how and what to do in physical activity. I did not like to run because I get too tired. The students can get benefit from knowledge.

*How could we make it better?

A: What I'd like to see is our teachers teaching us this and other skills, they don't really teach us like this.

Kuwaiti Student Number Two:

Q1: Explain your feeling toward physical education.

A: For me it is everything. You can run and have fun and relieve yourself from classes. I only like PE in school I'm terrible at all other subjects because I love sport.

Appendix (G)

Q2: Why do you think you have this feeling toward physical education class?

A: Because I'm really good at sport so I do good in PE.

Q3: Explain WHY? Can you give me an example?

A: I like the running. Some teachers don't know how to do exercises right and they can injure a student. I like being outdoors and playing and running during a football game, we all get together and have fun.

Q4: What is your experience with physical education throughout your school years.

A: In the elementary lesson the teacher would kick the ball and all of us would chase it and bring it back. In the intermediate school the teacher would just give us the ball and let us kick it and chase it. Here in secondary we are able to take the ball ourselves and play as we like.

Q5: Are your parents involved in any physical activity in their free time?

A: My father is dead. I have only my mother and my older brother and they are not active.

*What type? ---

*What do you think are the reasons for their (non) participation?

A: My mother just doesn't do that sort of thing, she used to walk to lose weight though. My oldest brother is a musician, he likes to play music rather than be active.

Q6: Do you have a close friend that is involved in physical activity?

A: Yes all my friends are athletic.

*What type?

A: They play all sorts of things. Some like track and field while some like different sports.

Appendix (G)

*What do you think are the reasons for their (non) participation?

A: Because they like this sport and they want to be on the national team.

Q7: Is there any other person that may effect your choices in physical activity?

A: Yes, the first one was my PE teacher in the fourth grade at elementary school. He encouraged me to play volleyball. After that the athletic training coach was visiting the school and encouraged me to take part in athletic competitions. I compared the two activities and decided the athletic sports was for me.

Q8: Could you think of anything that could make you interested in physical activity or sport?

A: As I said before, I love sport more than anything.

* Could you give an example?

A: I'm good at sport, I want to reach the world championship and become well known and famous.

Q9: Do you think there are benefits of being physically active or having regular work-outs?

A: Yes.

*If yes, what are these benefits?

A: It's good for the body it helps to lose excess weight.

Q10: What are the reasons why you do (don't) take part in physical activity?

A: I love to be active, it makes me happy and I feel successful. I don' think I'll graduate because teachers see me as big and athletic and say I'm not smart and a trouble maker. I don't see myself like that I guess they don't understand me. They think I don't want to study.

Appendix (G)

Q11: What could make you take part in regular physical activity?

A: I'll never stop being in athletics.

Q12: Where do you get most of the information about physical activity or sports?

A: From my coach, I also read books about athletic sports and distance running.

Q13: What does this information address or talk about?

A: Practical and theoretical information about running. How to warm-up and pace your running..

Q14: What do you think of the programme we presented?

A: It was good because it was the first time someone told us about safety in PE. What we should know about exercise to prevent an injury. How to lose weight, and so on was important too. What was not so good was the handouts. There were too many of them, too much paper.

*How could we make it better?

A: Don't make us do handouts or the homework.

British Teacher Interviews:

Teacher number one:

Q1: How long have you been teaching?

A: 14 years

Q2: What subjects do you teach?

A: Mathematics, computer studies, and some games.

Appendix (G)

Q3: What are your responsibilities at school?

A: I am second in the mathematics department. I am head of resources and I and administrative officer. In addition I look after school funds and am a teacher.

Q4: How long have you been teaching physical education?

A: At my first school I taught physical education for two years, at my second school I taught it two out of three years, here I have taught it three years.

Q5: Do you enjoy teaching physical education?

A: Yes, definitely.

Q6: What is your impression of students attitude toward physical education?

A: Actually it varies, I think as a whole most of them enjoy it. There are some who given an option they would rather do something else. There are those who would prefer to do nothing. Others that are more say cademically inclined prefer to be inside with a book. But the majority enjoy it.

* How do you think we could pull some of these students back to physical education?

**A: I think its because of their participation in sports up to this time. If it is football or rugby and they are not particularly strong at it and they are suffering every week. Strong students will enjoy it. To get the other students they will have to be able to enjoy it.*

Q7: How do you feel about written work in physical education?

A: I think it has its place, and it could be useful, giving the children how their body works, etc. I know they get it in biology and science and they have some knowledge probably about the physiology aspect of the body. But, having said that there has to be a balance between. If they are doing subject matter then they cannot be outside running about getting fresh air into their

lungs, which is obviously very important as well. For some of the children this is the only exercise they do throughout the week.

Q8: How do you feel when classes are canceled in order to allow students to participate in another class or event?

A: I feel sad from a purely selfish point of view. I like getting out on the field and having a run about. Being in class all week I find it a welcome change to get out myself. That's my purely personal point of view. I would say a goodly portion of the students feel sad at losing their lesson. I suspect a lot of them would rather lose certain other certain written subjects than physical education.

Q9: Do you think there is enough physical education time within the students schedule?

A: Ideally I'd say no they probably could benefit from more time but having said that realistically with everything that's being asked these days I don't think that anymore time could really be found within the school day, as it stands at the moment.

Q10: Do you think the students are active enough?

A: I think that it falls into two camps. Some children are very active from talking to them you find out who plays sports for school and who belongs to sports clubs outside school. Athletics, football, rugby are all represented by students of the school. I would say that about half of them are involved in teams outside of school, that is my impression from talking to them. At the same time there is the other side of the coin, there are those students who only participate in physical activity in physical education.

Appendix (G)

Q11: Do you think physical education is respected by students and non physical education teachers?

A: It's difficult to answer. Again you have a personal point of view. If the teacher enjoys sport and got anything out of sport then they would have more respect then someone who had to struggle with sport. As to the pupils, I would say the fact that they came along and take part in the lesson to a proper level, rather than just being there under duress, they are actually there to take part that in itself shows respect. As far as the staff is concerned there are always a few who think because PE is a non-exam class it's of a lower standard, but I don't think that at all. I think that it might not have an exam but that's no reason it should be considered any better or worse than anything else, it has its place within the school, possibly, as we keep saying it's the child's fitness that's at stake perhaps it should have greater respect than what it's given.

Q12: Can you tell me why you teach physical education?

A: When I was younger I enjoyed sport. When I was asked if I would like to take PE I jumped at the chance. Before I actually took PE I helped with games and sport after school. Then I was put in the time table at work. It's very much the case of a small school. There is always a problem of getting people for lessons. Because the specialists can't go around like in a larger school, so you do get overlap. People operating outside of their department. I do it because I enjoy it and I was asked to do it.

Q13: Do you consider yourself a good role model for physical education?

A: I don't do much sport that perhaps doesn't look very good, I could do to lose some weight, PE people are supposed to look fit. I know because of weight you're not fit but I participate and am enthusiastic and try to encourage others.

Q14: Have you taken any refresher courses in physical education since you left university?

A: No.

*Q: Do you have an training for PE?

**A: When I was in college I had only one specialty, mathematics. I played football and rugby about 12 years so I'm very knowledgeable about those two games, I keep track of rule changes, that helps.*

Q15: What did you think of the programme presented?

A: It's good it showed the students their fitness levels and what they could attain, and what perhaps they should attain. It has probably opened their eyes to the fact that there are ways to attain and improve health through exercise which is good for them in the long run. Hopefully it will encourage them to think about that. I thought it might have appeared to be a bit long. It could be better to speed it up. I liked the testing aspects. We all go around feeling we're not doing too bad. But when it's in figures it brings it home, that the fitness levels are not what they should be.

British Teacher Number Two:

Q1: How long have you been teaching?

A: 21 years

Q2: What subjects do you teach?

A: PE for 21 years; Human biology for 8 years; Mathematics for 12 years; and geography for 2 years.

Q3: What are your responsibilities at school?

A: Head of PE and head of year eight. Head of year means you are in charge of tutors, all papers of students and the administrative side, letters to parents discipline. Report evening, attendance any sort of problem with an student in the year group at all. It is very time consuming and very wearing. Head of PE, I'm in charge equipment, national curriculum, I assess students according to school policy. Extra curricular activities although those aren't mandatory by legal means.

Q4: How long have you been teaching physical education?

A: 21 years.

Q5: Do you enjoy teaching physical education?

A: I've enjoyed it more recently. I enjoyed it initially. Then I wanted to move on to other things. Then I took the head position and found I don't like that side of things at all. The administration, the paperwork.

Q6: What is your impression of students attitude toward physical education?

A: That depends on a lot of things. One if the can depend on you as a teacher. You're attitude, your enthusiasm comes through. Two often times it's totally dependent upon what they're doing. As with all children, if it's something they want to do they'll participate fully. If they don't enjoy it they don't want to participate. Actually trying to get across to them that what they should be doing is difficult because they don't find it an enjoyable process. On a whole they are very keen to compete. Even the poorer performers are quite keen to compete and participate in a game. They quite enjoy skill learning process as long as it's a fun situation, not a very disciplined or controlled situation. On the whole I'd say their attitude is quite good. Tennis, football, not all the students can participate the same and that's something you will never change.

Appendix (G)

Q7: How do you feel about written work in physical education?

A: I'm not keen. Personally it's one area where I think they want to come, they can physically work very hard without academic pressures. They can go through certain skills and think about games but not in the same sense they have to sit down at a desk and work with mathematics or English or science, there is no pressure. They can participate , work hard and have the sheer enjoyment of doing it. No pressure to succeed to a point where they have to be brilliant this or that. They set their own levels.

Q8: How do you feel when classes are canceled in order to allow students to participate in another class or event?

A: In the past I accommodated it to a large degree because it's difficult for some departments to do this or do that. In the future I believe that I'll be very much more anti- that situation happening. If we are trying to do a curriculum and we've got to get from one point to another and you get all these disruptions, it does disrupt the situation a great deal, and causes a lot of problems. Sometimes you're not sure which group has done what. It makes things much more difficult. In the future I'll be much more against it. Much less accommodating, we must be more selfish. With the national curriculum with its demands we have to be that way. We're sorry but we must get through.

Q9: Do you think there is enough physical education time within the students schedule?

A: We're lucky, in this school we get a fair amount of PE time. It has been eroded in the past two years with the national curriculum pushes from other subjects, other subjects need more time from the timetable. Not as much as some other schools as far as I can gather. But I think we have just enough, anything less would not be enough. I would prefer 2 lessons, a week.

Q10: Do you think the students are active enough?

A: Outside of school those who participate in school are active outside school. Many excel at a sport and play at a club at night. On the whole it's 50/50, There are those who watch television, or do something else rather than anything physical. Poorer quality facilities outside of school hardly encourage them to do anything. In school I'd say it depends on what we're trying to teach. It's difficult to instruct and be active at the same time, I put emphasis on activity rather than instructing.

Q11: Do you think physical education is respected by students and non physical education teachers?

A: I don't think the students have ever actually ever thought about it. Personally I think they enjoy it. I don't think they respect any subject. Some subjects they enjoy, some they loathe. Some they have got to do because employers want those subjects and they've got to do it whether they like it or not. There are other subjects they enjoy doing and want to do, and other areas where they don't like the subjects and don't want to do it. It's as true about PE as about technology or something. It's not respect but enjoyment. There are a lot of staff who don't respect PE. You get certain people in senior management who see PE as a flagship as far as this cut and that cut, presenting a good image for the school and get numbers up. You get members of staff who don't see PE as an equal subject. They don't see any importance if GCSE are not involved. There are those who don't give it respect.

Q12: Can you tell me why you teach physical education?

A: Fate. Probably because there was no career guidance given about what I should be looking for. You were just supposed to carry on to college. I was also good at sport and I took PE in college. Then came out and started

teaching straight away. I enjoy teaching I love teaching children. It can be frustrating at times. Given the opportunity over again, I would think it over very carefully before making it a career again.

Q13: Do you consider yourself a good role model for physical education?

A: Presently, on a whole they tend to respect me. I really don't know. I've never thought about it.

Q14: Have you taken any refresher courses in physical education since you left university?

A: No. I've done tax and middle management, but I've done nothing in PE.

Q15: What did you think of the programme presented?

A: In PE we try to say this is what we should be doing. It's for your benefit, I feel they should play more and be less concerned with tactics. To let them be more active. Children will in time realise the benefits of physical activity and exercise but it's a very long process. It will come from enjoyment rather than thrust upon them. The programme needed to be condensed and games oriented. The students also need to have a rapport with the person presenting, initiating the programme. The time scale could also use adjusting it should be shorter. I thought the worksheets were actually very good but the programme didn't keep the interest of the students. Testing to me was very good and very important to be incorporated in the programme. There was a need for much more competition to make it more interesting, maybe tennis or softball.

Appendix (G)

Teacher number three:

Q1: How long have you been teaching?

A: Since 1977.

Q2: What subjects do you teach?

A: Basically English and math, some PE.

Q3: What are your responsibilities at school?

A: In charge of special needs; help out with PE; In charge of year 10 students.

Q4: How long have you been teaching physical education?

A: Nine years, but I'm not a PE specialist.

Q5: Do you enjoy teaching physical education?

A: Yes it's a nice change to be outside as the bulk of my teaching is in the classroom. But the weather doesn't always help. It is different from book learning, which is what most of my other work is based on, I like sport.

Q6: What is your impression of students attitude toward physical education?

A: At this school their attitude is really quite good although it can be a little casual at times on the whole they are engaged in PE. There are always one or two who don't want to do it but on the whole that's not unusual. The major reaction is actually fairly good. I'm not a specialist and they work well with me so that says a lot.

Q7: How do you feel about written work in physical education?

A: If it's something a person would be wanting to make a career of, I can see it, but for the vast majority of students PE will only lead to leisure activities.

As such the burden of making it a written course would put them off. PE is a release, we want to get rid of their extra energy in PE, a classroom based lesson is a bad step.

Q8: How do you feel when classes are canceled in order to allow students to participate in another class or event?

A: Disappointed, I look forward to a break. Of getting out in the fresh air. Teaching indoors is stuffy. To get out and do PE even in winter. I'll be the one who wants to take the group out even if it's raining.

Q9: Do you think there is enough physical education time within the students schedule?

A: Probably, it's as much time as the curriculum can afford.

Q10: Do you think the students are active enough?

A: No, there are a percentage who are quite active, there are also a percentage who have come up in a very modern age who are not even used to walking. They are not used to physical activity. PE can help out a little bit to meet the shortfall. I do feel there has to be a lot more physical routine to their lives, and not necessarily just from PE. I'd say the average student does about a half hour a day. In my opinion that is not enough. There are exceptions who are very active but on average they are not. Maybe a ten minute walk to school is all they are getting.

Q11: Do you think physical education is respected by students and non physical education teachers?

A: Yes, the pupils look forward to PE, they want activity. It's respected for activity, but also because it gets them out of the classroom. There are a number of attractions. The staff see the value of students going out and

getting rid of their pent up energy. Hopefully they come back to the class being less active. PE as subject matter doesn't have the same standing, it's not an academic subject.

Q12: Can you tell me why you teach physical education?

A: I like to get out into the fresh air and do things. I enjoy the contact with the pupils. It's completely different to what would be in the classroom. It can be much more relaxed. I enjoy the competitive side, the students can challenge you, and you them. I enjoy it socially and physically.

Q13: Do you consider yourself a good role model for physical education?

A: I am enthusiastic toward sports. That is important, I'm an average sportsman. I'd never be very good at any sport but I'm enthusiastic. The enjoyment is the important bit. Success is nice but it is not essential.

Q14: Have you taken any refresher courses in physical education since you left university?

A: 18 months ago I took a one night course on coaching tennis, in college I never took PE courses, I have no training to teach PE.

Q15: What did you think of the programme presented?

A: This was the first time I saw something so tight in PE. Something so structured. It needs to timed differently, the students were aware that a game such as football would be following on in the lesson, and they saw that as more attractive than the material. It would have been better if only school staff conducted it as they already knew the students and you were only an observer. You didn't know the students and that was an obvious hindrance.

Appendix (G)

Kuwaiti Teacher Interviews:

Kuwaiti Teacher number one:

Q1: How long have you been teaching?

A: 17 years.

Q2: What subjects do you teach?

A: Physical education only.

Q3: What are your qualifications?

A: Diploma in teachers training; Bachelor of Science in physical education.

Q4: What are your responsibilities at school?

A: Head of physical education, I do morning assembly, i.e., make announcements and so forth before the day begins. I also arrange in-school teams.

Q5: How long have you been teaching physical education?

A: 25 years.

Q6: Do you enjoy teaching physical education?

A: Yes, it's fun.

Q7: What is your impression of students attitude toward physical education?

A: I think the students look at PE as not as important as their other subjects at school. All they think of is to have fun and play and to relax after the heavy subjects in school. After six periods of studying in the classroom they want to go out and have fun and play, be free on their own. Because of this it is important not to give the students any subject to study or something to

read or even think about when they come to PE. We must give them what they want. The game they want to play, and let them play. What I think about this way of thinking is that it is right, I agree with the students 100%. The purpose of PE in the school is to let the students have fun and enjoy themselves. They relieve themselves from the frustrations of the classroom and relax from tough subjects. Also activity should only be voluntary or elective the students choose what he'll do.

Q8: How do you feel about written work in physical education?

A: I think it has no place in PE. The students want to get out and play, you don't want him to sit still and you give him work. You can teach him some skills while he is playing. He could run with the ball and you could show him how to turn with the ball, but not in the classroom, not with a pencil and paper thing.

Q9: How do you feel when classes are canceled in order to allow students to participate in another class or event?

A: The students don't want that. Because they don't want it I don't want it. But if the other teacher wants the lesson time and the principal supports the other teacher, I can't say no.

Q10: Do you think there is enough physical education time within the students schedule?

A: I think year three and four do not have enough because they have only one hour and that is not enough. The year one and two students have enough because they have two periods a week. That's OK.

Q11: Do you think the students are active enough?

Appendix (G)

A: The students physical activity and fitness levels are very good. They have high levels of physical fitness, they could play with you through one or two lessons and won't get tired. They play at school and all afternoon at home. How do I know? I know it from my observation of them. We don't need to do any fitness testing because this requires writing and monitoring and it uses lesson time. The students don't want it they want to have fun. The fitness of the students is really very high.

Q12: Do you think physical education is respected by students and non physical education teachers?

A: The students they love it, but they don't respect it as a subject in school. Here in secondary school PE is pass fail, they might have more respect for it if it counted in their grades. PE is not as important as their other subjects. As for the other teachers in the school I don't feel that they respect PE as a subject. When we have a faculty meeting they show no respect for PE as a subject of influence in the school. I don't think parents respect it either. PE is only for playing and has no bearing on anything in the school. We as a society all together did not reach that level where we could see PE and physical activity as an important part in our lives. But it is as important as eating, or drinking, or sleeping.

Q13: Can you tell me why you teach physical education?

A: Because I have been involved in sport since I was young. I used to play volleyball, and I love sport so I went to the teaching institute and chose PE with volleyball specialisation.

Q14 Do you consider yourself a good role model for physical education?

A: Not anymore! As you can see I am very overweight and as I am 45 years old I am no longer a young guy. Before when I was younger, yes, I was a good role model.

Q15: Have you taken any refresher courses in physical education since you left university?

A: I've taken a lot of seminars, most of them about refereeing or training in volleyball. The last one I went to was in August 1992, it was in India about volleyball refereeing.

Q16: What did you think of the programme presented?

A: In the beginning we were happy to have you come and give the students something new. The students were happy and they were excited about it. They really liked the measurement testing but they felt bored with the programme. They just want to play like the other students. I think it should have been on video so they could watch it if they wanted.

Kuwaiti Teacher number two:

Q1: How long have you been teaching?

A: 17 years.

Q2: What subjects do you teach?

A: Only physical education.

Q3: What are your qualifications?

A: I received my Bachelor of Science in physical education in 1968 from Cairo University in Egypt.

Q4: What are your responsibilities at school?

A: If the school wants to put on some sort of show or demonstration I organise the students. There used to be a lot before the war but now it is very seldom done. I don't teach anything other than PE.

Q5: How long have you been teaching physical education?

A: 17 years.

Q6: Do you enjoy teaching physical education?

A: Yes, I've always liked sport.

Q7: What is your impression of students attitude toward physical education?

A: I think that the students love PE because it is for them. It is just playing time, they don't care about a grade because it doesn't count.

Q8: How do you feel about written work in physical education?

A: It's not good, the students don't want to be bothered with things like that in PE, besides there really isn't much to teach in PE.

Q9: How do you feel when classes are canceled in order to allow students to participate in another class or event?

A: If the other teacher wants to take my lesson, I don't say no if it's for the students good. The students usually don't want that so sometimes I'll try and say no because the students want to have fun.

Q10: Do you think there is enough physical education time within the students schedule?

A: I think that PE for 3rd and 4th year is not enough, so we let them play all the lesson as they like. First and second are good because they have it two times a week.

Appendix (G)

Q11: Do you think the students are active enough?

A: I think the students in secondary school are in very bad condition, and they have very low fitness levels. They do not engage in any physical activity except for the one or two hours they have in PE. There are those who are in some type of sport club so they are better, but they are not so good in school. Most of the students are done for if they run two laps on the track. That is very bad for the students at this age.

Q12: Do you think physical education is respected by students and non physical education teachers?

A: Because PE has no bearing on the students grades or education I don't think anyone respects it, not the students or the teachers or the parents.

Q13: Can you tell me why you teach physical education?

A: All my life I was an athlete. I played football and played for the Egyptian National team. The best way I saw to convey my love of sport was through PE.

Q14: Do you consider yourself a good role model for physical education?

A: I can't say that I am a role model or not that is up to the other person.

Q15: Have you taken any refresher courses in physical education since you left university?

A: Last year I took a seminar on advanced curriculum in teaching football.

Q16: What did you think of the programme presented?

A: It was too much for the students. It is really better to let them do what they want in PE, that is what PE is here for. It shouldn't really be a lesson where they must learn something.

Appendix (H)

Preliminary Study: Height by Nationality and Age

Table 1. Preliminary Study: Height for the British and Kuwaiti boys as a group in cm.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	170.04	170	164.75	176	7.99	168
Kuwaiti	163.53	164	157.75	170	8.72	108

Table 2. Preliminary Study: Height for 15 year old British and Kuwaiti boys in cm.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	169.66	170	164	175	8.45	118
Kuwaiti	163.57	164	157	170	8.90	88

Table 3. Preliminary Study: Height for 16 year old British and Kuwaiti boys in cm.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	170.94	170.50	167	176	6.77	50
Kuwaiti	163.25	164.50	160	168.50	8.29	20

Appendix (H)

Preliminary Study: Weight by Nationality and Age

Table 4. Preliminary Study: Weight for the British and Kuwaiti boys as a group in Kg.

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	57.47	57	61	51.50	10.04	167
Kuwaiti	56.96	54	66	45	15.48	108

Table 5. Preliminary Study: Weight for 15 year old British and Kuwaiti boys in Kg..

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	58	57	61	52	10.93	117
Kuwaiti	58	55.50	68.25	46	15.95	88

Table 6. Preliminary Study: Weight for 16 year old British and Kuwaiti boys in Kg..

	Mean	Median	1st. quartile	3rd. quartile	S	N
British	56.22	56.50	60	50.25	7.54	50
Kuwaiti	52.40	48.50	60.25	44	12.58	20

Appendix (I)

Intervention Study Results by Age

Table 1. Participation rates for 15 and 16 year old British and Kuwaiti boys in physical activity within the school but outside PE lesson and in activities outside the school.

	Pre-test		Post-test	
	In school other than PE	Outside the school setting	In school other than PE	Outside the school setting
15y British n = 28	68% (n = 19)	79% (n = 22)	71% (n = 20)	68% (n = 19)
16y British n = 13	69% (n = 9)	69% (n = 9)	69% (n = 9)	69% (n = 9)
15y Kuwaiti n = 41	49% (n = 20)	56% (n = 23)	61% (n = 25)	49% (n = 20)
16y Kuwaiti n = 9	44% (n = 4)	67% (n = 6)	44% (n = 4)	56% (n = 5)

Table 2. Type of extra-curricular activity in which students participated.

	Pre-test			post-test		
	Team	Individual	Both	Team	Individual	Both
15y British n = 19	21% (n = 4)	5% (n = 1)	74% (n = 14)	16% (n = 3)	5% (n = 1)	79% (n = 15)
16y British n = 9	33% (n = 3)	----	67% (n = 6)	56% (n = 5)	----	44% (n = 4)
15y Kuwaiti n = 21	24% (n = 5)	14% (n = 3)	62% (n = 13)	38% (n = 8)	19% (n = 4)	43% (n = 9)
16y Kuwaiti n = 7	43% (n = 3)	43% (n = 3)	14% (n = 1)	57% (n = 4)	43% (n = 3)	----

Table 3. Pre-test seasonal activity levels for 15 and 16 year old British and Kuwaiti boys.

	Pre-test			
	Spring	**Summer**	**Autumn**	**Winter**
15y British n = 28	61% (n = 17)	71% (n = 20)	54% (n = 15)	39% (n = 11)
16y British n = 13	46% (n = 6)	46% (n = 6)	38% (n = 5)	23% (n = 3)
15y Kuwaiti n = 41	66% (n = 27)	51% (n = 21)	56% (n = 23)	61% (n = 25)
16y Kuwaiti n = 9	56% (n = 5)	33% (n = 3)	44% (n = 4)	44% (n = 4)

Appendix (I)

Table 4. Post-test seasonal activity levels for 15 and 16 year old British and Kuwaiti boys.

	Post-test			
	Spring	**Summer**	**Autumn**	**Winter**
15y British n = 28	43% (n = 12)	57% (n = 16)	46% (n = 13)	36% (n = 10)
16y British n = 13	31% (n = 4)	54% (n = 7)	38% (n = 5)	15% (n = 2)
15y Kuwaiti n = 41	83% (n = 34)	78% (n = 32)	71% (n = 29)	59% (n = 24)
16y Kuwaiti n = 9	67% (n = 6)	56% (n = 5)	44% (n = 4)	89% (n = 8)

Table 5. The 10 most popular activities for the 15 year old British and Kuwaiti Boys.

	Pre-test		Post-test	
Activities	**15y British n = 28**	**15y Kuwaiti n = 41**	**15y British n = 28**	**15y Kuwaiti n = 41**
Soccer	1	1	1	1
Tennis	2	10	2	10
Rugby	3	---	5	---
Running	4	8	3	5
Swimming	4	4	4	2
Cycling	6	7	8	9
Basketball	7	2	---	4
Cricket	8	---	6	---
Walking	8	9	---	8
Badminton	10	---	---	---
Handball	---	5	---	6
Horseback ridding	---	---	---	10
Rounders	---	---	8	---
Snooker	---	---	7	---
Softball	---	---	8	---
Table tennis	---	6	---	7
Track & Field	---	---	---	10
Volleyball	---	3	---	2

Appendix (I)

Table 6. The 10 most popular activities for the 16 year old British and Kuwaiti Boys.

	Pre-test		Post-test	
Activities	**16y British n = 13**	**16y Kuwaiti n = 9**	**16y British n = 13**	**16y Kuwaiti n = 9**
Soccer	1	1	1	1
Rugby	2	---	3	---
Tennis	3	---	2	9
Basketball	4	---	5	3
Cricket	4	---	4	---
Running	6	3	6	5
Swimming	6	2	6	5
Golf	8	---	---	---
Hockey	8	---	6	---
Martial arts	8	---	6	---
Cycling	---	7	---	9
Handball	---	3	---	5
Rounders	---	---	6	---
Table tennis	---	3	---	3
Track & Field	---	8	---	5
Volleyball	---	3	---	2
Walking	---	---	---	9
Weight training	---	---	---	9

Table 7. The average daily sedentary hours (h : min) for the 15 year old British and Kuwaiti boys.

	Pre-test		Post-test	
Activity	15y British n = 24	15y Kuwaiti n = 39	15y British n = 24	15y Kuwaiti n = 39
Homework	1:46	4:0	2:04	3:06
Television	2:30	1:34	2:14	2:06
Computer game	1:12	00:36	1:13	00:36
Total	5:38	6:10	5:31	5:48

Appendix (I)

Table 8 The average daily sedentary hours (h : min) for the 16 year old British and Kuwaiti boys.

	Pre-test		Post-test	
Activity	16y British n = 9	16y Kuwaiti n = 9	16y British n = 9	16y Kuwaiti n = 9
Homework	1:13	2:23	1:20	0:48
Television	2:43	1:43	2:34	2:10
Computer game	0:43	1:07	0:30	0:27
Total	4:39	5:13	4:24	3:35

Table 9. Percentage of 15 and 16 year old British and Kuwaiti boys indicating concern about their weight.

	Pre-test	**Post-test**
15y British n = 28	21% (n = 6)	11% (n = 3)
16y British n = 13	23% (n = 3)	31% (n = 4)
15y Kuwaiti n = 41	66% (n = 27)	61% (n =25)
16y Kuwaiti n = 9	44% (n = 4)	44% (n = 4)

Table 10. Means of transportation to school for 15 and 16 year old British and Kuwaiti boys at pre-test.

	Automobile	**Bus**	**Bicycle**	**Walking**
15y British n = 24	25% (n = 6)	42% (n = 10)	---	33% (n = 8)
16y British n = 9	22% (n = 2)	56% (n = 5)	---	22% (n = 2)
15y Kuwaiti n = 41	93% (n = 38)	---	---	7% (n = 3)
16y Kuwaiti n = 9	44% (n = 4)	---	---	56% (n = 5)

Appendix (I)

Table 11. Means of transportation to school for 15 and 16 year old British and Kuwaiti boys at post-test.

	Automobile	Bus	Bicycle	Walking
15y British n = 24	25% (n = 6)	42% (n = 10)	4% (n = 1)	29% (n = 7)
16y British n = 9	33% (n = 3)	56% (n = 5)	---	11% (n = 1)
15y Kuwaiti n = 41	95% (n = 39)	---	---	5% (n = 2)
16y Kuwaiti n = 9	56% (n = 5)	---	---	44% (n = 4)

Table 12. The 15 year old British and Kuwaiti boys responses to 12 opinion statements about PE lessons.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	45.41	48.05	46.55	45.68
Median	48	48	46	48
Mode.	52	60	37	50
S	9.67	8.15	9.87	10.40
N	22	41	22	41

Table 13. The 16 year old British and Kuwaiti boys responses to 12 opinion statements about PE lessons.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	53.29	45.89	53.71	42.78
Median	52	47	54	44
Mode	48	42	56	38
S	4.07	6.41	3.20	8.20
N	7	9	7	9

Appendix (I)

Table 14. Pre- and post-test results of the 15 year old British and Kuwaiti Knowledge test.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	4.92	.81	8.17	5.34
Median	4.50	0	8	6
Mode	3	0	7	7
S	3.11	1.27	3.95	3.16
N	24	41	24	41

Table 15. Pre- and post-test results of the 16 year old British and Kuwaiti Knowledge test.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	3.89	.67	5.78	5.0
Median	2	0	6	6
Mode	2	0	2	3
S	3.89	1.0	3.27	3.08
N	9	9	9	9

Table 16. Pre- and post-test attitude score for 15 year old British and Kuwaiti boys.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	145.88	144.22	140.71	134.51
Median	156.50	148	144	143
Mode	145	145	144	101
S	27.96	19.89	30.50	27.89
N	24	41	24	41

Appendix (I)

Table 17. Pre- and post-test attitude score for 16 year old British and Kuwaiti boys.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	159.22	143.90	155.89	138.30
Median	152	142.50	153	149
Mode	156	110	132	149
S	11.21	15.70	16.24	27.60
N	9	10	9	10

Table 18. One mile Walk / Run results time in min:sec. of the 15 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	8:03	11:15	7:32	10:06
Median	7:13	10:55	7:04	9:39
Mode	13:13	11:30	12:05	10:19
S	1:47	2:32	1:34	2:31
N	19	27	19	27

Table 19. One mile Walk / Run results time in min:sec. of the 16 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	7:55	9:09	7:09	7:35
Median	7:10	8:50	6:11	7:44
Mode	7:10	11:18	9:43	8:21
S	1:24	1:27	1:33	0:40
N	9	5	9	5

Appendix (I)

Table 20. The results of the number of completed sit-ups in one minute for the 15 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	41	30	44	30
Median	40	30	47	30
Mode	40	25	48	17
S	5.73	12.01	6.0	13.33
N	19	41	19	41

Table 21. The results of the number of completed sit-ups in one minute for the 16 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	44	29	52	31
Median	45	35	52	33
Mode	42	35	45	33
S	6.20	14.55	4.53	13.35
N	9	9	9	9

Table 22. The sit and reach results in cm. for the 15 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	23	21	26	21
Median	21	20	27	22
Mode	26	20	28	15
S	7.82	8.70	7.71	7.86
N	19	41	19	41

Appendix (I)

Table 23. The sit and reach results in cm. for the 16 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	21	24	24	22
Median	19	24	22	17
Mode	19	24	22	17
S	7.95	13.56	9.28	14.46
N	9	9	9	9

Table 24. Sum of triceps and subscapular skinfolds results in mm. for the 15 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	20.26	44	21.21	41.58
Median	15	40.50	17	36
Mode	14.50	24	18	22
S	13.14	26.88	11.63	25.74
N	19	40	19	40

Table 25. Sum of triceps and subscapular skinfolds results in mm. for the 16 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	17.94	45	19.06	39
Median	15	41	18	29
Mode	11.50	17	12	15
S	8.16	31.84	6.39	26.77
N	9	9	9	9

Appendix (I)

Table 26. Height results in cm. for the 15 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	168.16	161.61	171.32	162.78
Median	168	162	171	163
Mode	157	167	168	160
S	7.76	6.59	7.29	6.86
N	19	41	19	41

Table 27. Height results in cm. for the 16 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	173	168.33	175.44	169.56
Median	176	169	178	171
Mode	164	176	182	168
S	9.93	7.02	9.75	7.06
N	9	9	9	9

Table 28. Weight results in Kg. for the 15 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**15y British**	**15y Kuwaiti**	**15y British**	**15y Kuwaiti**
Mean	54.16	60.54	58.05	64.12
Median	55	54	60	60
Mode	58	45	60	48
S	8.22	20.36	10.01	21.12
N	19	41	19	41

Table 29. Weight results in Kg. for the 16 year old British and Kuwaiti boys at the pre- and post-test.

	Pre-test		Post-test	
Score	**16y British**	**16y Kuwaiti**	**16y British**	**16y Kuwaiti**
Mean	57.78	73.44	60.44	74.44
Median	60	68	58	72
Mode	50	50	50	49
S	8.24	27.44	9.21	23.81
N	9	9	9	9